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ABSTRACT

Part of the "Nutrition Education-Choose Well, Be Well" curriculum series, this guide was developed to help teachers, food service personnel, professionals, and parents provide nutrition education and make nutrition come alive in the classroom, home, or cafeteria. Organized by grade level (from fourth through sixth), activities described are intended to contribute to students' ability to reach expected performance levels identified as being minimum proficiency levels for nutrition in California schools. Within each grade-level section are information acquisition lessons, values awareness lessons, and open-ended discussion lessons. Each lesson focuses on one of the following topics: food choices, factors influencing food choices, food-related careers, consumer competencies, and food handling. A description of procedures to be followed and a list of appropriate instructional materials accompany each lesson. Illustrations, handouts, work sheets, games, and other related materials referred to in the text are provided in nine appendices. (MP)

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# Nutrition Education
# Choose Well Be Well

## A Curriculum Guide for the Upper Elementary Grades

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Wilson Riles, Superintendent of Public Instruction
Sacramento, 1982

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# Foreword

National attention is being focused more and more on the importance of nutrition for good health. Studies have shown that nutrition plays a direct role in the overall development of children's mental and physical abilities. Therefore, it is critical that we focus on the important task of improving nutrition and the quality of our children's lives through an ongoing, effective nutrition education program. To accomplish this task, we must help change children's attitudes toward food, modify their eating habits, and improve their ability to use nutrition information.

Through the enactment of state legislation and participation in federal child nutrition programs, California has made a major commitment to nutrition education. With the financial support provided by the Child Nutrition Facilities Act (Senate Bill 120) and the National School Lunch Act and Child Nutrition Amendment (Public Law 95-166), the state has established a comprehensive nutrition education and training program.

One of the objectives of the Nutrition Education and Training Program is to teach children, through a positive daily lunchroom experience and appropriate classroom reinforcement, the value of a nutritionally adequate diet. To be effective, nutrition education efforts must combine the expertise and efforts of teachers, food service professionals, and parents. To build bridges between food service and instructional programs and between home and school is a challenge to those persons who accept the responsibility for nutrition education. I hope that this publication and others in the *Choose Well, Be Well* curriculum series will be helpful to those who accept the challenge to build these most important bridges to good health for our children.

Wilson Riles

*Superintendent of Public Instruction*

# Preface

This guide for upper elementary grades four through six was developed as part of the *Nutrition Education—Choose Well, Be Well* curriculum series to assist teachers, food service professionals, and parents in implementing nutrition education and in making nutrition come alive in the classroom and cafeteria. It is not intended as a prescription for learning, but rather as a resource from which educators can acquire ideas to develop relevant curricula for specific learning groups.

The guide is organized by grade level and contains activities that may extend over several days. All activities contribute to students' abilities to reach the expected performance levels identified in the *Minimum Proficiency Levels for Nutrition Education in California Schools.*

The goal of the guide is to provide opportunities through which individuals can develop the knowledge and skills needed to make wise food choices that will contribute to their overall health and well-being throughout life.

**WILLIAM D. WHITENECK**
*Deputy Superintendent*
*for Administration*

**BARRY L. GRIFFING**
*Associate Superintendent*
*Division of Child Development*
*and Nutrition Services*

**L. GENE WHITE**
*Director,*
*Office of Child Nutrition Services*

**AMANDA DEW MELLINGER**
*Coordinator, Nutrition Education*
*and Training Program*

# Introduction to the Curriculum

Many Americans do not eat wisely. Influenced by misleading food advertisements and diet fads and rushed by the demands of work and home, we often make food choices based on convenience, with little or no thought to the nutritional contribution of the foods selected. As nutrition studies have shown, this failure to select food wisely is responsible in part for many Americans having less than optimal health.

What can be done? Nutrition educators are attempting—through efforts such as the *Choose Well, Be Well* curriculum series—to help individuals obtain the knowledge and skills necessary to make food choices that will contribute to overall good health throughout life. The result, it is hoped, will be life-long improvement in the well-being of all Americans.

### Role of Nutrition Education in the Curriculum

Many goals have been stated for education. Foremost, educational agencies have the demanding responsibility of educating the total individual. Nutritional status affects a person's mental and physical alertness. Therefore, nutrition education is a positive effort to maximize the learning potential of students.

Within the school curriculum, students can learn the importance of a nutritionally adequate diet through a positive daily lunchroom experience as well as through appropriate classroom reinforcement. Through a continuing and sequential educational process, students are able to transform knowledge about their nutritional needs and the nutritive value of foods into decisions affecting their eating behavior and promoting their health and well-being. Students can gain sufficient background for their nutrition decisions from educational experiences related to food choices, factors that influence food choices, appropriate methods of food handling, effective consumer practices, and food-related careers.

A nutrition education curriculum need not compete for teaching time with other curricula deemed important by the school. Nutrition education activities may be integrated into subjects such as science, art, mathematics, social studies, language arts, and physical education.

### Relationship of Nutrition Education to Health

A curriculum designed to meet the goals of nutrition education emphasizes health as a significant value in one's personal life. An important value, such as health, does not develop as the result of student exposure to a few "lessons." Rather, the value emerges and changes as students acquire, experience, and evaluate new information. A curriculum that attempts to foster health as a value allows students, throughout their school experience, to build their knowledge, to question, and to make decisions about personal health that will contribute continuously to their overall well-being.

### Decision Making in Nutrition Education

The decision-making process is inherent in food selection. Decisions about food that are made daily do have a cumulative effect on an individual's health and well-being. One unique feature of the *Choose Well, Be Well* curriculum series is that the lessons have been designed to enable students to make wise nutrition-related decisions. Lessons in the curriculum series provide accurate and current information, facilitate an awareness of the students' own nutrition-related values, and provide opportunities for them to share their nutrition-related opinions and attitudes with others as part of the decision-making process.

### Goals for Nutrition Education

The goals for nutrition education are developed from the *Health Instruction Framework for California Public Schools.* The nutrition instructional program is planned to enable students:

- To develop an understanding that eating patterns are dependent on interrelationships among physical, social, psychological, economic, and cultural factors
- To consider alternatives in meeting nutritional needs and to decide various ways to achieve good nutrition within these eating patterns
- To develop eating patterns which contribute to wellness

The nutrition education goals are directed toward the attainment of nutrition subject matter, organized into five topics (referred to as concepts in the *Health Instruction Framework).* The identified topics serve as a foundation for nutrition instruction, curriculum development, and evaluation. The topics include the following categories:

- *Food Choices*—Daily food intake is related to the attainment of optimal health.
- *Factors Influencing Food Choices*—Life-styles, peers, and individual family resources reflect similarities and differences in food choices.
- *Food-Related Careers*—Needs, roles, responsibilities, and educational requirements affect choices in food and health nutrition-related careers.
- *Consumer Competencies*—Effective utilization of existing resources may enhance potential for satisfying individual and family nutritional needs and wants.
- *Food Handling*—The quality and safety of foods are influenced by the handling, processing, and preparing of foods.

Minimum proficiency levels for students were developed in each of these topic areas to ensure the systematic achievement of the three goals from the *Health Instruction Framework.* The proficiencies that provide the basis for the objectives and lessons in this curriculum are found in the publication, *Minimum Proficiency Levels for Nutrition Education in California Schools.* (See Appendix A.)

### Organization of the Curriculum

This curriculum guide is divided by grade levels, grade four through grade six. Within each grade level section are information acquisition lessons, values awareness lessons, and open-ended discussion lessons.

Some lessons contain activities that extend over several days; other lessons contain one specific activity. All activities contribute to the students' abilities to reach the expected performance levels identified in the *Minimum Proficiency Levels for Nutrition Education in California Schools.*

### How to Use the Curriculum

The recommended grade level for curriculum lessons given in Chart 1 suggests a method of satisfying the minimum proficiencies across all grade levels.

**Chart 1**
**Recommended Grade Levels for Curriculum Lessons**

| Minimum Proficiencies Addressed | Recommended Grade Level* | | | | | | |
|---|---|---|---|---|---|---|---|
| | Preschool/ Kindergarten | 1 | 2 | 3 | 4 | 5 | 6 |
| **Food Choices Lessons** | | | | | | | |
| Classifying foods | ● | ● | | ● | | | |
| Need for food | ● | | | | | | |
| Diet-related health problems | | ● | ● | | | | |
| Digestion | | | ● | | ● | | |
| Basic food groupings | | | ● | | | ● | |
| Personal energy needs | | | | ● | | | |
| School lunch pattern | | | | ● | | ● | |

### Chart 1 Recommended Grade Levels for Curriculum Lessons

| Minimum Proficiencies Addressed | Recommended Grade Level* Preschool/ Kindergarten | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Six nutrient groups | | | | | ● | ● | |
| Planning nutritionally adequate meals | | | | | | | ● |
| **Factors Influencing Food Choices Lessons** | | | | | | | |
| General environmental influences | ● | | ● | | | | |
| Aesthetic and sensory influences | ● | | | | | ● | |
| Cultural influences | ● | | | | | | ● |
| Between-meal snacks | | ● | | | | | |
| Home and social influences | | | | ● | ● | | |
| **Food-related Careers Lessons** | | | | | | | |
| Role of workers in food and health-related careers | ● | ● | ● | ● | ● | ● | ● |
| **Consumer Competencies Lessons** | | | | | | | |
| Advertising | ● | ● | | | | | |
| Food waste | ● | | ● | | | | |
| Food labels | | | | ● | | | |
| Influencing the school lunchroom environment | | | | | ● | | |
| Influencing the school lunch menu | | | | | | ● | |
| Unit pricing | | | | | | | ● |
| **Food Handling Lessons** | | | | | | | |
| Plant growth and production | ● | | | | | | ● |
| Sanitation | ● | ● | | | | | |
| Food storage | ● | | ● | | | | |
| Food preparation | ● | | | ● | | ● | |
| Food-borne illness | | | | | ● | | |

*Note: A solid bullet (•) indicates that a lesson addressing a specific proficiency is included in the identified grade level. These recommendations are not intended to be followed rigorously; rather, they are an outline of how a nutrition program might progress from one grade level to another grade level.

Although a sequence for teaching the lessons is suggested, lessons are not restricted to the recommended grade level. More important is the fact that teachers be able to select lessons which fit in with their own arrangement of the curriculum. Teachers should feel free to pick and choose among lessons as well as among activities within lessons. Teachers are encouraged to adopt or adapt those lessons which blend with the ongoing curriculum and meet the specific needs of their students.

### Teaching Strategies

Many aspects of nutrition education, such as selecting foods, require emphasis on knowledge and attitudes. Cognitive learning about nutrition and food choices is not sufficient for achieving the nutrition goals recommended in this guide. Rather, a balance of cognitive and affective learning allows students to make food decisions based on knowledge and an awareness of their own opinions and values.

Lessons contained in *Nutrition Education—Choose Well, Be Well* contribute to the balance between cognitive and affective learning necessary for wise food choices. The lessons focus on three different teaching strategies: information acquistion, values awareness, and open-ended discussion.[1]

1. Information Acquisition Lessons

   Key Outcome:

   - Provides the students with basic knowledge and skills

   Process for Implementing the Teaching Strategy:

   - Inform the students of what they are to learn and describe how learning will be evaluated.
   - Make the specific information available to the students.
   - Provide practice for the students in recalling specific information by doing such things as identifying, distinguishing, listing, and describing. Monitor their practice and provide appropriate feedback.
   - Use the evaluation described in each lesson to assess the students' ability to recall the information specified.

2. Values Awareness Lessons

   Key Outcomes:

   - Allows the students the opportunity to identify reasons for their choices and to label the reasons as values
   - Allows the students an opportunity for independent thinking and self-expression in a nonjudgmental atmosphere

   Process for Implementing the Teaching Strategy:

   - Ask the students to focus on a particular issue or topic.
   - Ask the students to make a choice about the particular issue and give a reason for that choice.
   - Assist the students in clarifying their responses.[2]
   - Inform the students that while they are giving reasons for their choices they are really talking about their values.
   - Follow the activity sequence in the order given for the most effective use of this type of lesson.

3. Open-Ended Discussion Lessons

   Key Outcome:

   - Provides the students an opportunity to share ideas and opinions in a nonjudgmental atmosphere.

   Process for Implementing the Teaching Strategy:

   - Inform the students that the purpose of this activity is to give them an opportunity to express how they feel about a particular topic.
   - Describe the rules for discussion:
     a. Explain to the students that as teacher or leader you will not give your opinion but that you will help make sure that all of the students have a chance to talk if they wish.
     b. Explain that if the students do not understand what someone has said, they may ask that person for further clarification.
     c. Remind the students that people will have different ideas. They may disagree with the ideas of other people, but they should not make fun of other people's ideas.
     d. Inform the students that they will take turns speaking in the discussion.
   - Restate the particular discussion question you have chosen for response and invite the students to share their thoughts and opinions.
   - Follow the discussion sequence in the order given for the most effective use of this type of lesson.

### Community and Parent Involvement

Community agencies and parents can be immensely helpful in contributing to the educational process.

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[1] Lesson classification and suggested teaching strategies courtesy of Raymond G. Cowan, Jr., Gus T. Dalis, Dennis C. Loggins, Benedict B. Strasser, and the Office of the Los Angeles County Superintendent of Schools. Distributed by the Teaching Strategies Center, Division of Curriculum and Instructional Services, Copyright 1979.

[2] In some instances it will be necessary to follow student comments with further clarifying questions; i.e., "Would it be correct to say that one of your values about breakfast foods is that they are quick and easy to prepare?" Allow students to answer "yes" or "no" and thereby consider whether or not the stated value is important to them.

Frequently they can provide assistance in implementing lesson activities, serve as classroom speakers, or provide print and audiovisual materials.

### Food Service Involvement

The support of the food service department within educational agencies is essential to the success of nutrition education. Food service personnel have a keen interest in nutrition education and can be valuable members of the nutrition education team. Nutrition education staff members are encouraged to develop creative methods for integrating the food service program with the nutrition curriculum. The cafeteria should be viewed as a laboratory for the practice of nutrition and a culmination of the decision-making process which has been initiated in the classroom.

## Chapter Two

# Grade Four Nutrition Lessons

The nutrition education lessons for grade four students were designed as a resource for administrators, teachers, school food service employees, and others who wish to offer instruction relating to the minimum proficiency levels in nutrition education. Each lesson focuses on one of five topics: (A) Food Choices; (B) Factors Influencing Food Choices; (C) Food-Related Careers; (D) Consumer Competencies; and (E) Food Handling. In addition to providing instruction in the five topic areas, the lessons are designed (1) to help students acquire basic information; (2) to encourage them to discuss matters relating to nutrition; and (3) to help students become aware of the values they place on certain issues related to nutrition. Each lesson activity provides a description of the procedures to be followed in the lesson and a list of the appropriate instructional materials.

# Lesson 1. Identifying Effects of Eating Environments

## *An information acquisition lesson designed to help students identify how home and/or social eating environments influence food selection*

### Objective

After completing this lesson, the students should be able to identify time of day, location, occasion, and companions as factors affecting food selection.

### Key Facts

The eating patterns of people during special events, such as holidays, parties, and picnics, influence food choices (i.e., turkey at Thanksgiving, cake at birthdays, and watermelon at picnics). The kinds of foods we choose to eat often depend on the time and place, the occasion, and the people present at the meal.

Nutritious foods can be served at special events and on holidays instead of foods with empty calories (foods high in calories with little or no nutritional value). Examples are fruit juice instead of soft drinks, raw vegetables instead of chips, whole wheat or nut bread sandwiches instead of cookies.

### Activities: Effects of Environment on Food Choices

| *Procedures* | *Materials needed* |
|---|---|
| 1. Explain to the students that they will be learning how different eating situations affect their food selections. Read to the students the following list of situations and ask them to select one situation (or assign groups of students to work on each situation):<br>• Camping trip (with campfire for cooking)<br>• Birthday party in the summertime<br>• Thanksgiving dinner<br>• Picnic lunch for two people in the park<br>• Lunch at a fast food restaurant<br>• Bag lunch for school<br>• Quick after-school snack<br>Have the students develop a list of food appropriate for their situation. Conclude that different situations can determine what foods are eaten, depending on tradition, portability, availability of a means of cooking, and availability of food and time. | |
| 2. Have the students name foods that they do not like. Make a list of about ten food items on the chalkboard. Then ask the students to list ten foods they do like. Ask the students the following questions:<br>• How would you feel if you had a favorite food and you heard your best friend say, "I would not eat that"? Would the comment stop you from eating the food? Why or why not?<br>• If a food in a restaurant or in your lunch is new to you, and someone said, "What a yukky food," would you taste it? Why or why not?<br>• If a tasting party was held in the class that included a new food, would you eat it if everyone else ate the food? Why or why not?<br>Ask the students whether a friend's reaction to a food might influence their reaction to the food. Discuss the reasons for their reaction to the food. Discuss how family members and the environment at someone's home might determine what foods a person will eat. | |

## Activities: Effects of Environment on Food Choices

| Procedures | Materials needed |
|---|---|
| 3. Assemble blank booklets or have the students assemble the booklets. (The number of pages will be determined by the number of days spent on the lesson.)<br>Ask the students to design the cover and give the booklet the title *My Food Booklet,* or a title of their choice.<br>Select at least five of the open-ended statements listed below. Every day put one statement on the chalkboard. Have the students copy the open-ended statements in their booklets and complete them. Have the students illustrate their completed statements and discuss their pictures with the rest of the class.<br>• When I eat in a restaurant, I . . .<br>• When mom tells me to clean my plate, I . . .<br>• When I get called in for dinner, I . . .<br>• Doing dishes makes me feel . . .<br>• When eating in the school lunch area, I . . .<br>• Washing my hands before eating makes me . . .<br>• When my teacher eats with me, I . . .<br>• When my mother does not have much time to get dinner, I . . .<br>• When going on a picnic, I . . .<br>• I do not feel like eating when I am . . .<br>• The food that makes me feel the best is . . .<br>• I like to eat with people who . . .<br>• My favorite color of food is . . .<br>• What I like about the lunch area is . . .<br>• What I like about our food service worker is . . .<br>• When I watch my baby sister or brother eat, I . . .<br>• My favorite time to eat is . . .<br>• My favorite food is . . . | 9- by 12-inch construction paper<br>8½- by 11-inch blank sheets of paper |

### Evaluation Suggestions

1. Have the students list three of the items discussed that affect food selection (e.g., time of day, location, occasion, and companions).
2. Review the students' booklets for completeness.

### Food Service Involvement

Have the students invite the food service manager to class and share with him or her sections of their booklets that deal with the school lunch program.

# Lesson 2. Choosing a Restaurant

***An open-ended discussion lesson which gives the students an opportunity to share ideas, opinions, and feelings about choosing a restaurant for a birthday dinner***

*Procedures*

**Discussion Sequence**

1. Inform the students that the purpose of this lesson is to share ideas about choosing a restaurant for dinner.
2. Tell the students that you intend to read a story about twins who have to make a decision together.
3. Inform the students that at the end of the story you will give them an opportunity to help the twins.
4. Read the story entitled "A Birthday Dinner for Larry and Laura."
5. Present the discussion rules outlined in Chapter One.
6. Restate the question: If you were Larry and Laura, what kind of restaurant would you choose to celebrate your birthday?
7. Conduct the discussion.

*Materials needed*

**A Birthday Dinner for Larry and Laura**

Larry and Laura are twins who live in the city. Both are in the fourth grade. They are very excited because their birthday is in two more days. Their parents have promised to take them to a restaurant to celebrate the occasion. Each may invite one friend to go with them. Larry and Laura have already invited a friend to go to dinner.

The twins have talked about many different restaurants, what kinds of food each one serves, how they would have to dress and act at each one, and how much money their parents would have to spend. But they have not been able to decide on a restaurant.

If you were Larry or Laura, what kind of restaurant would you choose to celebrate your birthday?

# Lesson 3. Exploring Values About Restaurants

***A values awareness lesson in which the students explore their values about restaurants***

*Procedures*

**Activity Sequence**

1. Inform the students that the purpose of this lesson is to help them become aware of some of their values about restaurants.
2. Ask the students to imagine that their birthday is next weekend and that their parents have agreed to pay for them and four friends to eat at one of three restaurants.
3. Point out that a list of characteristics has been prepared for each of the three restaurants for their use in selecting one for the birthday dinner. The food served in each of the restaurants is equally good, so it is not a criteria. Give the students time to review the list and select a restaurant.
4. After the students have selected a restaurant, ask them to review the list of characteristics of the restaurant, and check the characteristic that was the basis for their decision.
5. Ask the students to write their most important reason on the line in the value statement.
6. Organize the class in same restaurant groups. A maximum of four students should be assigned to a group. The group should select a recorder, who should receive another copy of the restaurant work sheet. Acting as the group leader, the recorder should ask each member of the group, including himself or herself, to report the most important characteristic for selecting a restaurant for a party. The recorder should place a check next to each characteristic on the work sheet that is mentioned. If more than one person names the same characteristic, additional checks should be used.
7. Inform the recorder that he or she should ask each member of the group to indicate which characteristic was the least important in selecting the restaurant for their birthday party. These least important characteristics are to be recorded on the form by circling the number.
8. Write the following sentence patterns on the chalkboard:
   - Some of the most important values in selecting a restaurant for a birthday party are ______________________________________________.
   - Some of the least important values are ______________________________________________.

   Beginning with the groups who chose Restaurant 1, invite each recorder to report by reading and completing the two sentence patterns on the chalkboard, adding the information from their group. After each recorder has reported, the teacher may make one or more of the following comments as appropriate about the values considered:
   - It is interesting that all of the people in your group used the same value to select the restaurant.
   - It is interesting that though all (or some) of the people in your group chose the same restaurant, you did so because of different values.

   As additional groups who have chosen the same restaurant report,

*Materials needed*

Work Sheet: "Selecting a Restaurant," page I-2 in Appendix I

| Procedures | Materials needed |
|---|---|
| you may wish to compare groups by making similar comments about their values, such as the following:<br>• It is interesting that your group also chose Restaurant 1 but for values different from the other groups. The other groups' most important values are ____________ and ____________, while yours are ____________, and ____________.<br>**Values Application**<br>As an extension of this lesson topic, you may want to pose the following question for the students' response: If you were going to take your parents to dinner, which of these restaurants would you choose and why? Comments similar to those made in response to the group reports may be made in response to the students' comments. In instances where the students' restaurant choices changed, the point may also be made that when the situation changes our most important values may change; therefore, one can end up with different decisions. | |

# Lesson 4. Selecting School Party Foods

**A values awareness lesson in which students explore their values about foods for school parties**

Procedures

Materials needed

**Activity Sequence**

1. Inform the students that the purpose of this lesson is to help them become aware of some of their values about foods for school parties. During the lesson the students will be involved in identifying or recommending foods to be served at a forthcoming class party. The lesson, therefore, may be used as the students' plan for the party. If it is impractical to use the lesson in this way, it may be used as a simulation, in which the students pretend that they are preparing for a class party.
2. Inform the students that in a few weeks they are going to have a class party (e.g., Valentine's Day or Halloween). They will have an opportunity to identify the characteristics of the school party foods that are important to them. These characteristics will help the room mother or aide to decide what foods will be served.
3. Invite the students to begin by naming some of their favorite classroom party foods. Record their responses on the chalkboard. Prepare a lengthy list of possibilities.
4. Point out that the list will be given to the room mother or person who has agreed to be in charge of the refreshments. Note that this person will have to make some decisions about which foods are to be served. Next, invite the class to name some characteristics to keep in mind when selecting party foods for the class. Write the following on the chalkboard: Values About Class Party Foods. The students may think it is important that the menu for a class party include some crunchy food. Write crunchy on the chalkboard under the heading VALUES. Ask the students to look at the list of foods and determine whether or not they have some other values about class party foods. Tell the students to avoid using words like *tastes good* and *I like them.* These statements are not helpful as guidelines for the room mother or aide in deciding what the students want. List the students' comments on the chalkboard under the heading. The list need not be lengthy.
5. Point out that their list reflects some of their values about class party foods.

   Option A:

   If this list is for an actual party, give the room mother both the list of foods and the list of students' values about class party foods for use in planning the menu.

   Option B:

   If this lesson is only a simulation, invite each student to select two values from the list, then prepare a class party menu based on the two values.

# Lesson 5. Improving the School Lunch Area

***An information acquisition lesson designed to help students determine one way they can improve the environment of the school lunch area***

### Objective

After completing this lesson, the students should be able to identify one way the school lunch area can be improved.

### Key Facts

The noise level and general atmosphere of the lunch area are factors that affect eating behavior. The environment can be improved by lowering the noise level, thus creating a more relaxed atmosphere. Cleanliness is also important and contributes to a pleasant atmosphere. Wall decor and other decorations are inviting and can enhance the environment of the cafeteria.

### Activities: The School Lunch Area Environment

| Procedures | Materials needed |
|---|---|
| 1. Play a tape recording of the normal lunch noise level (recorded without student knowledge) and ask the students to guess the source of the sounds. Record the answers on the chalkboard, but do not let the students know if they guessed correctly. | Tape recording of noise in school eating area |
| 2. Show a picture of the lunch area floor or the area around the trash can (also taken without student knowledge) and ask the students to identify the location of the picture. Record the answers on the board. Again, do not let the students know if their answers are correct.<br>Ask the students if the lunch area looks and sounds like a pleasant area.<br>Tell the class the recording and picture were of the school lunch area. Ask what could be done to improve the lunch area atmosphere (i.e., cut noise level, pick up trash, and put up posters.) List ideas mentioned in class on the chalkboard. | Picture of floor or ground in school eating area<br>Picture of trash can area |
| 3. Start a campaign to improve the school's eating area by using improvements suggested by the students.<br>Assign students to the following committees for the school campaign:<br>*Poster Crew.* Members make posters (to be approved by principal) that can be put up as reminders to the students.<br>*Publicity.* Members go to other classes to explain the school campaign.<br>*Clean-up Crew.* Students pick up trash around eating areas at lunchtime.<br>*Rules Committee.* Committee members write letters to the principal, the food service staff, and the student council on how improvements can and should be made in the school lunch area. | Paper<br>Crayons<br>Pencils<br>Pens |
| 4. Have a clean table contest. Make a chart to hang in the cafeteria. Have the principal or food service staff judge tables for cleanliness after lunch. Record the result on the chart and at the end of the week present an award for the cleanest table. | |

| *Procedures* | *Materials needed* |
|---|---|
| 5. Form a Student Advisory Council (SAC). Select one student representative from each class, one parent, one teacher, the principal (or vice-principal), and the cafeteria manager to form the council. Have SAC representatives survey other students about the school lunch. The council should meet once a month to discuss opinions and suggestions for improving the school lunch area and food. | Student Advisory Council Kit, Appendix C<br>School Lunch Survey Sample, Appendix C, pages C-2 and C-3 |

**Evaluation Suggestions**

1. Have the students write and/or illustrate one way in which they helped to improve the school lunchroom environment that week.
2. Have the students develop the rules and standards for judging the "Clean Table Contest."

**Food Service Involvement**

1. Invite the food service manager to work with the SAC to improve the lunch program.
2. Invite the food service director to SAC meetings and/or have students write letters to the director and describe their likes and dislikes about the lunch program.

# Lesson 6. Choosing Between Food or Friends at Lunch Time

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about choosing between eating lunch or being with friends***

*Procedures*

**Discussion Sequence**

1. Inform the students that the purpose of this lesson is to share ideas about eating lunch and being with friends.
2. Tell the students you will read them a story about Mary and her problem. They will have time after the story to help Mary with her problem.
3. Read the story "Mary's Lunch."
4. Present the discussion rules outlined in Chapter One.
5. Restate the discussion question: What would you do if you were Mary?
6. Conduct the discussion.

*Materials needed*

**Mary's Lunch**

Mary couldn't wait for lunch as she sat at her desk in fourth grade. She always had a good breakfast before going to school, but after working hard all morning, she was ready to eat lunch. When the bell rang, the teacher excused everyone to line up for lunch.

Mary went and got her lunch and sat down to eat. She had taken only a few bites when some of her friends finished their lunches. They wanted her to go out and play. This happened every day.

Mary was hungry and wanted to eat her lunch. But she never had enough time to finish before her friends started calling her to play games. Sometimes she would just sit and eat all of her lunch, and she would feel good because she wasn't hungry anymore. But then her friends would become angry with her because she would be late to play.

On other days Mary would just eat a little of her lunch. She would be hungry, but she didn't want her friends to be mad at her. Later in the afternoon, she would still be hungry, and she would regret not having eaten all her lunch. Her hunger sometimes caused her to become cranky.

Every day Mary had to choose between eating her lunch or throwing most of it away so that she could be with her friends. What would you do if you were Mary?

# Lesson 7. Sharing Ideas to Improve Mealtimes

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about unpleasant mealtimes***

*Procedures*

**Discussion Sequence**

1. Inform the students that the purpose of this lesson is to have them share ideas to improve mealtimes.
2. Tell the students you will read them a story about Jack.
3. Explain that, after you read the story, you are going to ask them to share their ideas about what Jack should do.
4. Read the story "Dinnertime at Jack's."
5. Present the discussion rules outlined in Chapter One.
6. Present the discussion question: What can Jack suggest to make mealtimes more pleasant for everyone?
7. Conduct the discussion.

*Materials needed*

**Dinnertime at Jack's**

Jack Loren is in the fourth grade. He lives with his mother and two older sisters, Ann and Sherri. Everyone has their chores to do around the house. One of Jack's chores is to set the table for dinner. At one time, dinner was Jack's favorite meal, but lately he hasn't enjoyed it as much. It isn't the food because Mrs. Loren is a terrific cook.

The problem is with Ann and Sherri. They complain during dinner about their chores and how much homework they have to do. If Mrs. Loren tries to get them to stop their complaining, they argue.

Jack doesn't enjoy eating when he has to listen to his unhappy sisters. He knows his mother doesn't like it either, but sometimes she is tired and doesn't want to argue with the girls.

Jack thought to himself that there must be a way to make dinnertime more pleasant for everyone, including his sisters. If he could only think of something, maybe his family would be willing to try. What suggestions can Jack make so that mealtimes are more pleasant for everyone?

# Lesson 8. Identifying Nutrient Groups

***An information acquisition lesson designed to help students name the six nutrient groups and identify at least one function for each of the groups***

### Objective

After completing this lesson, the students should be able to name the six nutrient groups and identify at least one function of each nutrient group.

### Key Facts

Foods contain nutrients that the human body needs to function properly, and the interrelationships among nutrients are important for promoting good health. The six nutrient groups are carbohydrate, water, fat, minerals, vitamins, and protein. One easy way to remember the nutrient groups is to use a catch sentence like Cats Wait For Mice Very Patiently. No single food has all the nutrients needed for full growth and health. Each nutrient has specific uses in the body. Most nutrients do their best work in the body when they are teamed with other nutrients.

The six nutrient groups nourish the body and are vital to good health. To have a basic knowledge of good nutrition, it is necessary to understand how these nutrients affect the body and what foods must be eaten to get the necessary amounts of each nutrient. The chart shown below summarizes some of the important nutrients.

| | Nutrient | Function | Food sources |
|---|---|---|---|
| **Cats** | Carbohydrate | Energy | Grains, starchy vegetables such as potatoes, corn, and peas; fruits; and dried beans and peas |
| **Wait** | Water | Carries nutrients in blood, helps maintain body temperature, and aids in digestion | Most foods and all beverages |
| **For** | Fat | Provides body with energy and carries some vitamins | Butter, margarine, vegetable oil, lard, salad dressing, cream, bacon, nuts, and fried foods |
| **Mice** | Minerals | Regulate and maintain body functions such as digestion | All food groups |
| | Iron | Iron helps to carry oxygen to body cells. | Meat, fish, poultry, legumes, grains, dark green leafy vegetables, and dried fruits |
| | Calcium | Calcium helps to build strong bones and teeth. | Milk, milk products, and dark green leafy vegetables |
| **Very** | Vitamins | Regulate and maintain body functions, promote good appetite and digestion, and aid in growth | All food groups |
| | A | Vitamin A promotes smooth skin and improves night vision. | Fruits, vegetables, milk, and milk products |
| | C | Vitamin C helps promote healthy gums and helps fight infection. | Fruits and vegetables, especially citrus fruits |
| **Patiently** | Protein | Promotes tissue building and repair of all body parts | Meat, fish, poultry, nuts, seeds, legumes, milk, cheese, and eggs |

**Activities: Nutrient Groups**

| *Procedures* | *Materials needed* |
|---|---|
| 1. Write the following sentence on the chalkboard: Cats Wait For Mice Very Patiently. Leave the sentence on the chalkboard to arouse the students' curiosity. After a few days have passed, introduce the sentence and point out that the first letter of each word represents the first letter of each of the six nutrient groups. Allow the students several days to memorize the sentence. | |
| 2. Draw the chart outlined in Key Facts on the chalkboard after the students have memorized the sentence above. Starting with the first word "Cats," fill in the chart while discussing it with the class. Ask the students to copy the information from the chalkboard onto their work sheet. | Work Sheet: "Nutrients: What They Do and Where They Are Found," page I-3 in Appendix I |
| 3. Have the students construct mobiles that identify the nutrient groups. Emphasize to the students that some of the groups include many separate nutrients. List the following nutrients on the chalkboard:<br>Vitamins: A, C, and others<br>Minerals: calcium, iron, and others<br>Carbohydrates: starches and sugars | |
| Be certain that specific vitamins, minerals, and carbohydrates are connected to the name of the appropriate nutrient group. See the mobile diagram on page 22. | Teacher reference sheet: "Mobile Construction," page 22 |
| 4. Have the students complete the language work sheet, "The Nutrient Groups." Discuss the students' answers. | Work Sheet: "The Nutrient Groups," page I-4, with answers on page 21 |

**Activities: Nutrient Functions**

| *Procedures* | *Materials needed* |
|---|---|
| 1. Provide the students with individual copies of "Nutrient Puzzles," scissors, and tape (or paste). Have the students cut out the individual jigsaw puzzle pieces and arrange them to make six separate and complete puzzles. After the students have completed the puzzles, review the puzzle contents. | "Nutrient Puzzles," pages I-5 through I-7<br>"Key to Puzzles," page 23 |
| 2. Have the students complete the work sheet, "Oh, What They Do For Me!" Summarize the correct answers in a minilecture. Emphasize that people's diets are often low in minerals such as calcium and iron; and that some people do not include enough foods in their diet which provide vitamins A and C. | Work Sheet: "Oh, What They Do for Me!" page I-8, with answers on page 21 |
| 3. Read the following nutrient descriptions to the students and ask them to identify the correct nutrient group from the description:<br>I am a builder. I help your body to grow. I also help to repair body tissue such as muscle and skin. I am found in meat, fish, poultry, eggs, and legumes. Who am I? (Protein)<br>I am full of energy. Sugar and starches are forms of me. You need me for energy to make it through the day. I am found in grains, legumes, and starchy vegetables. Who am I? (Carbohydrate)<br>I help to control body temperature and other body processes. I help transport nutrients throughout the body. I am found in almost every kind of food. Who am I? (Water) | |

| Procedures | Materials needed |
|---|---|
| I am stored in your body to provide you with energy. I am found in butter, lard, salad dressings, and nuts. Who am I? (Fat)<br>I am a body regulator. You need me for clear skin, good appetite and digestion, and growth and good health. I also fight infection. Who am I? (Vitamins)<br>I am a body regulator. I am needed for building strong bones and teeth and carrying oxygen to the cells. Who am I? (Minerals) | |
| 4. Have the students play "Guess the Real Mr. Nutrient Game." Prior to introducing the game to the students, cut out the nutrient descriptions on page I-9 and mount them on 3-inch by 5-inch index cards. | "Guess the Real Mr. Nutrient Game," page I-9 |
| 5. Have the students complete the "Nutrient Group Crossword Puzzle." Discuss the correct answers with the students. | Work Sheet: "Nutrient Group Crossword Puzzle," page I-10, with answers on page 21 |
| 6. Make a "participation" bulletin board display on the functions of the various nutrients. Place Group A poster labels on the left side of the display; attach a string with a thumb tack on the end to each label. Place Group B phrases on the right side of the display. Discuss with the students the correct match as you complete the bulletin board. | Tagboard<br>String<br>Thumb tacks |

Match Them Up - - - What Do the Nutrients Do?

| Group A | Group B |
|---|---|
| Protein | Builds and repairs body tissues |
| Fat | Source of energy and carries some vitamins |
| Carbohydrate | Provides energy to do work |
| Calcium | Builds strong bones and teeth |
| Iron | Carries oxygen to body cells |
| Vitamin A | Promotes smooth skin and improves night vision |
| Vitamin C | Helps to promote healthy gums and fights infection |
| Water | Controls body temperature |

**Evaluation Suggestions**

1. Have the students orally list the six nutrient groups after they share and discuss mobiles. Ask the students to identify orally one function of each nutrient group.
2. Ask the students to complete the work sheet, "Nutrient Scramble," on page I-11. Check for correct responses on page 21.

**Food Service Involvement**

1. Ask the food service manager to display the classroom-constructed mobiles in the school's eating area.
2. Work with the food service manager to construct nutrient labels to display with food served in the cafeteria during school lunch or breakfast. For example:

> Here is a food that gives
> you the nutrient, protein.

## Notes

**Answer Key:**

### The Nutrient Groups

A

1. Nutrients
2. Protein
3. Carbohydrates
4. Fat
5. Vitamins
6. Minerals
7. Water
8. Iron
9. Calcium
10. Sugar
11. Starch

B

1. Calcium
2. Carbohydrates
3. Fat
4. Iron
5. Minerals
6. Nutrients
7. Protein
8. Starch
9. Sugar
10. Vitamins
11. Water

C

1. Car-bo-hy-drate
2. Nu-tri-ent
3. Pro-tein

D

1. Nutrients
2. Protein, fat carbohydrate, vitamins, minerals, and water
3. A, C
4. Plants and animals

### Oh, What They Do for Me!

1. Carbohydrate
2. Fat
3. Minerals
4. Protein
5. Vitamins
6. Water

### Nutrient Scramble

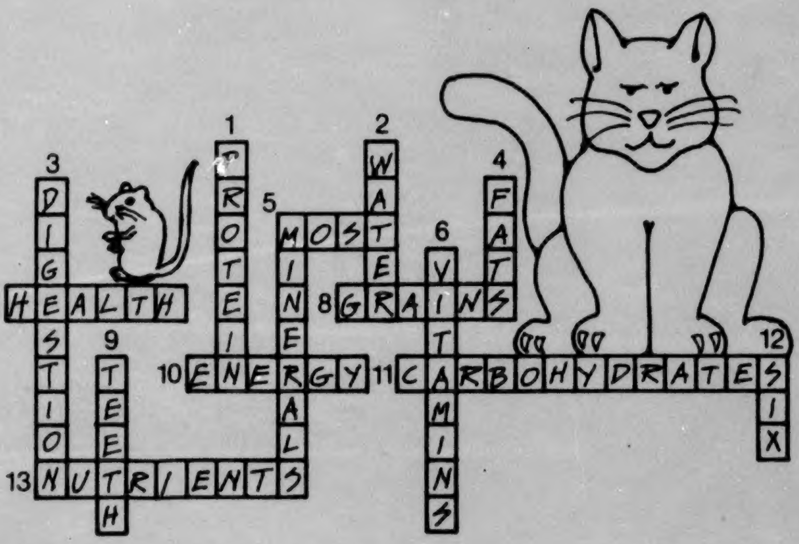
A

1. Carbohydrates
2. Protein
3. Fat
4. Water
5. Vitamins
6. Minerals

B

1. Carbohydrates
2. Water
3. Protein
4. Minerals
5. Vitamins
6. Fat

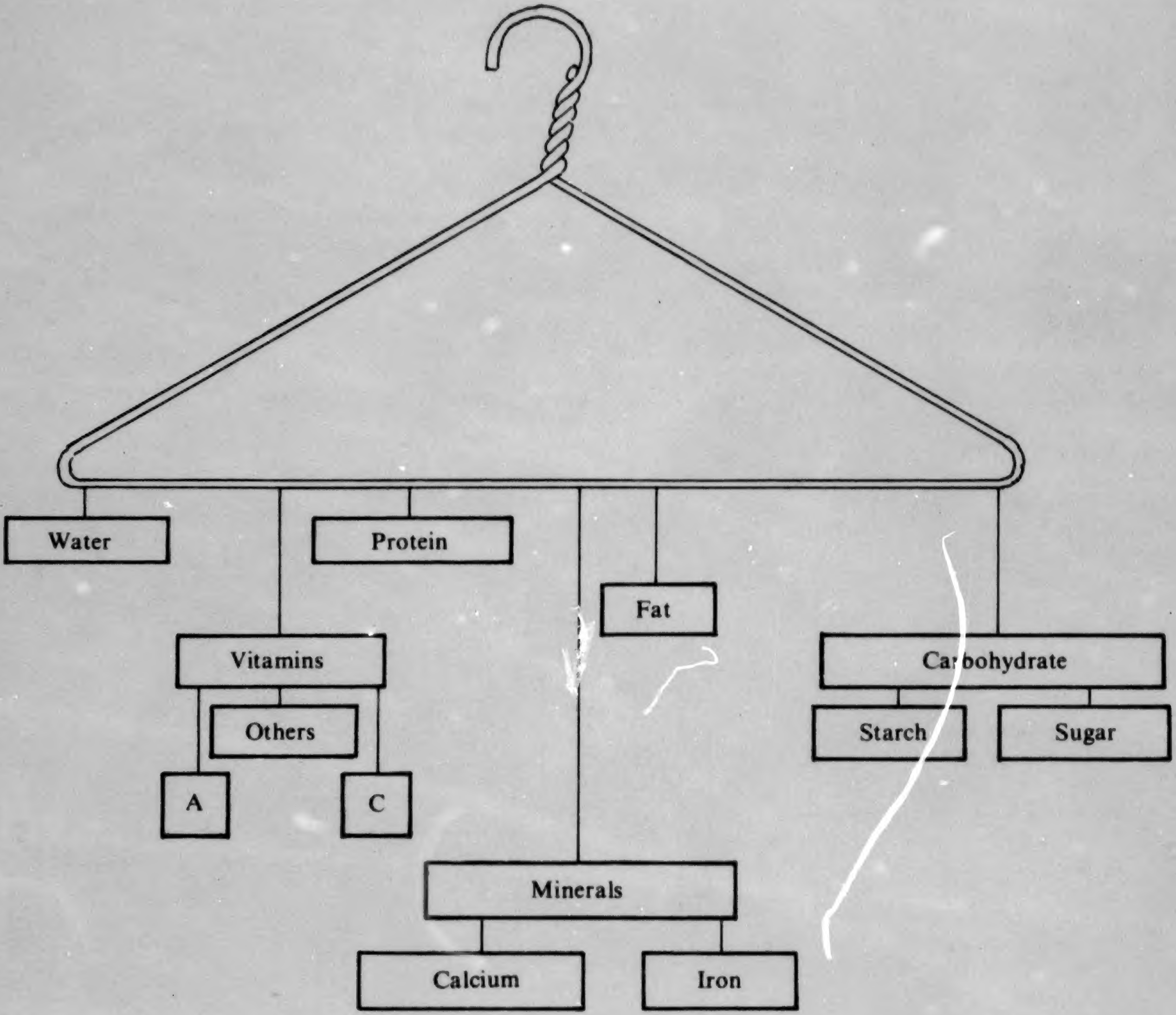
### Nutrient Group Crossword Puzzle


1 PROTEIN
2 WATER
3 DIGESTION
4 FATS
5 MOST
MINERALS
6 VITAMINS
7 HEALTH
8 GRAINS
9 TEETH
10 ENERGY
11 CARBOHYDRATES
12 SIX
13 NUTRIENTS

# *Mobile Construction*

**Materials needed:**

1. Hangers - one for each student
2. String
3. Construction paper
4. Tape


Water
Protein
Fat
Vitamins
Carbohydrate
Others
Starch
Sugar
A
C
Minerals
Calcium
Iron

## *Key to Puzzles on Pages I-5, I-6, and I-7*

**Vitamins—** regulate body processes

**Carbohydrate—** supplies energy through sugars and starches

**Minerals—** build body framework

**Fat—** provides a large amount of energy and carries certain vitamins

**Protein—** helps build and repair body tissues

**Water—** controls body temperature

# Lesson 9. Selecting Food for Packing a Lunch

***A values awareness lesson in which the students explore their values about selecting food for a packed lunch***

*Procedures*

**Activity Sequence**

1. Inform the students that the purpose of this lesson is to help them become aware of their values about selecting food for a packed lunch.
2. Distribute the "Pack Your Own Lunch" work sheet.
3. Explain to the students that they are to pretend that they are packing their own lunch box for a hike the class is to take to a local park. They may pack any four of the food items listed on the work sheet.
4. Read the entire list of items while the students follow along. (If you have pictures of the food items, display them at this time.)
5. Explain to the students that their packed lunch will be the only food they will have to eat between breakfast and dinner.
6. Give the students a few minutes to circle the four food items they would like to have in their lunch box.
7. Instruct the students to write the names of the food items they circled at the bottom of the work sheet.
8. Ask several students to read aloud the four food items they chose. Ask them to respond to the question, "Why did you select these food items?" Encourage them to give a rationale other than, or in addition to, taste as a reason for the selection.
9. Respond to the students' rationale by suggesting what you believe their values are for making the food choices. Your inferences regarding the students' values should do the following: (1) identify their reasons for making the choices; (2) label the reasons as values; (3) specify the food or foods for a box lunch; and (4) phrase the sentence as a question, inviting the students to respond. Read the following examples which will help to explain how the inferring of values should take place:
   - The student says, "I chose a ham sandwich, a salad, fried chicken, and soup because I do not want to get hungry before dinner tonight."

     You could say, "Would it be fair to say that satisfaction of hunger is one of your values in making food choices?"
     The student could answer, "yes" or "no."
   - The student says, "I like a lot of different kinds of food in my lunch, so I put in a bologna sandwich, potato chips, cookies, and a banana."

     You could say, "It seems to me that one of your values about making food choices is variety. Is that correct?"
     The student could say, "yes" or "no."
   - The student says, "I packed a tuna sandwich, celery, an apple, and milk because all of them are good for me."

     You could say, "Would it be correct to say that one of your values about selecting foods is that they have nutritional value or provide good nutrition for you?"
     The student could answer, "yes" or "no."
10. Look for values about food for a packed lunch, such as the foods keep well, are easy to prepare, are not messy to eat, go well together, are satisfying, provide energy, and can be munched on during a hike.

*Materials needed*

Work Sheet: "Pack Your Own Lunch" (revise the list if needed), page I-12

Pictures of food items (optional)

# Lesson 10. Identifying Six Steps in the Digestive Process

## An information acquisition lesson designed to help students recognize the various steps in the digestive process and the role of fiber in digestion

### Objective

After completing this lesson, the students should be able to identify the six steps in the digestive process, to describe what happens at each step, and to explain the role of fiber in digestion.

### Key Facts

Digestion is the body's way of reducing food into small units or molecules so that it can be moved into the bloodstream and then on to the cells. Most food eaten is eventually turned into a liquid form.

The process starts in the mouth with the chewing of food by the teeth. At this point the salivary glands produce saliva which makes the food easier to chew and swallow. Saliva contains enzymes which begin to break down the food. After being mixed with saliva, the food travels down the esophagus and into the stomach, where it is broken down even more by gastric juices. From the stomach, the food moves to the small intestine, where enzymes break down protein, fat, and carbohydrate into even simpler forms of food, leaving some leftovers that the body cannot digest. These leftover substances move on to the large intestine. The simpler forms of food, amino acids (from proteins), glucose (from carbohydrates), and fatty acids (from fats) left in the small intestine are absorbed into the bloodstream. The bloodstream transports the simpler food substances to the body cells.

Meanwhile, the leftovers are moving through the large intestine, picking up bacteria and waste. The leftovers move on through the lower part of the large intestine, called the rectum, eventually to be eliminated from the body. This process takes from 3 to 24 hours, depending on what and how much was eaten.

Fiber is an indigestible substance found in plant products. All fruits and vegetables contain fiber in the cell wall structure. The bran portion (outer covering) of grains is especially rich in fiber.

Fiber is needed for a healthy digestive system, because it helps the intestines move waste along the digestive tract. Foods high in fiber include whole grain breads and cereals, brown rice, fresh fruits, such as apples and pears, and vegetables, such as celery and carrots.

### Activities: The Digestive System

| *Procedures* | *Materials needed* |
|---|---|
| 1. Review and discuss the process of digestion and the major pathway (mouth, esophagus, stomach, small intestine, large intestine, and rectum). Draw a picture of the body on the chalkboard, or make a digestion transparency and trace the pathway of digestion. Then review the body parts and their functions. | Work Sheet: "Transparent Self," page I-13 |
| 2. Conduct experiments to demonstrate the following: | |
| a. The action of an enzyme in breaking down starch into sugar.<br>Have the students chew a soda cracker and hold it in their mouths for one minute. Ask the students to describe how the cracker tasted after one minute. How would you describe the change?<br>(Cracker will taste sweeter as the starches break down to sugars.) | Soda crackers, one for each student |
| b. Protein digestion.<br>Put a raw egg into a jar. Add one to two tablespoons of water and label the jar "water." Put another raw egg and two tablespoons of vinegar into another jar. Label the jar "vinegar." Gently shake both jars. Have the students examine both jars. Which egg changed the most? Why?<br>(Vinegar acts as a tenderizer and breaks down the protein.) | 2 jars<br>2 raw eggs<br>2 tablespoons of vinegar<br>Water |
| 3. Have the students play the game, "The Food Tube." Prior to the game, mount copies of the game board on poster board. Mount the questions on poster board, laminate, and then cut them into cards. | "The Food Tube Game," pages I-14 through I-18<br>Instructions, page 27 |

| Procedures | Materials needed |
|---|---|
| 4. Conduct an experiment to demonstrate osmosis or the process in which nutrients move through the cell wall membrane of the intestine to the lymph and blood vessels. Explain to students that a liquid of weaker concentration will pass through a membrane to a liquid of stronger concentration by osmosis. | |
| a. Place a cut stalk of celery in colored water. Watch the colored water rise by osmosis after a day or two. | Celery stalk<br>Colored water |
| b. Have a student cut three equal-sized pieces of potato and place them in three cups of water as described below.<br>• Water<br>• Water with ⅛ tsp. (0.6 g) of salt<br>• Water with 2 Tbsp. (28 g) of salt | Potato<br>3 bowls<br>Salt |
| c. Have the students compare the pieces of potato after one hour and after several hours. What happened? Log the experiment results. | |
| *Results:* After one hour there should be no change in the potato in plain water or in ⅛ teaspoon (0.6 g) salt. The potato in 2 tablespoons (28 g) of salt should be slightly soft. After several hours, there should be no change in the potato in water only. The potato in ⅛ teaspoon (0.6 g) of salt should be slightly soft; and the potato in 2 tablespoons (28 g) of salt should be very soft. | |
| Inform the students that this process is similar to the one in which nutrients are absorbed from the small intestine. | |
| *Optional:* Show a sponge absorbing water to demonstrate absorption. | |
| 5. Review the digestive process with "The Digestion Game." | "The Digestion Game," page 27 |
| Divide the class into two groups. Ask the first student on one side a digestion question. If the student answers correctly, he or she may remain standing; if the student answers wrong, he or she must sit down. Question alternate groups until only one person remains standing. | |

**Activities: High Fiber Foods**

| Procedures | Materials needed |
|---|---|
| 1. Ask the students to bring to class a rock the size of a golf ball. Caution the students to avoid marking the surface of the desks. When the students have their rocks, distribute a paper towel, a pad of newspapers, and a piece of celery to each of them. Have the students pound the celery with the rock for three to four minutes. Then ask the students to describe the residue on the paper towel left from crushing the celery. Explain that what remains is fiber, which is an indigestible substance found in plant products. All fruits and vegetables contain fiber in the cell wall structure. The bran portion of grains (outer covering) is especially rich in fiber. | Rock<br>Celery<br>Paper towel<br>Newspaper pad for each student |
| 2. Have the students prepare bran muffins, a high fiber food. | Bran muffin recipe, page 28<br>Food supplies<br>Oven or fry pan |
| 3. Have the students identify foods that have a high fiber content on the work sheet, "Which Has More Fiber?" | Work Sheet: "Which Has More Fiber?" pages I-19 and I-20 |

### Evaluation Suggestions

1. Have the students recite orally the six steps in the digestive process. List the students' responses on the chalkboard and ask other students to describe orally what happens at each step.
2. Have the students complete work sheets, "Digestion Match," on page I-21, and "Digestive System," on page I-22. Check the work sheets for the completeness and accuracy of the answers.

### Food Service Involvement

Have the students review the school lunch menus and identify foods that are high in fiber. When the students find high-fiber foods on the menu, have them write a thank-you note to the food service manager and mention the facts they have learned about fiber. Ask the food service manager to display the thank-you notes in the school's eating area.

## Notes

### The Food Tube Game (pages I-14 through I-18)

The game requires two or more players. Each player selects a token (i.e., eraser, paper clip, or coin). To begin, the first player takes a card from the top of the deck and hands it to the player on the right, who reads the question. Then the first player tries to answer the question. If the answer is correct, the player moves the number of spaces listed on the card and places the card into the discard pile. If the answer is not correct, the card must be buried at the bottom of the deck. Play is then continued with the next player at the right until someone reaches the cell. If the deck of cards is used up during play, they should be shuffled and used again.

To construct the game, mount the game board on poster board. Questions should be mounted on poster board, laminated, and then cut into cards.

---

### Questions for the Digestion Game

The following questions should be printed on cards:

1. After a person has finished eating, is his or her body through with its work? (no)
2. What does food change into after it has been eaten? (food for body cells)
3. What is the process called in which breakfast, lunch, or dinner is changed into food for body cells? (digestion)
4. When you smell your favorite food cooking and your mouth begins to water, what is this water called? (saliva)
5. Which three things in the mouth work together to prepare food during the first part of digestion? (tongue, teeth, and saliva)
6. Why is it necessary for a person to eat? (to feed the body cells)
7. Water is as necessary to the body as food. Do most foods give the body water? (yes)
8. Glands in the stomach make a fluid called ________________? (gastric juice)
9. Gastric juice contains special chemicals called ________________ ? (enzymes)
10. What do enzymes do? (Speed up the break down of food into particles tiny enough to enter the cells)
11. Name the six parts of the body that food uses as a path to complete digestion. (mouth, esophagus, stomach, small intestine, large intestine, and rectum)
12. Solid foods, when in the body, must be broken down into what form? (liquid)
13. Solid food is broken down in the body into tiny particles called ________________? (molecules)
14. Where does food go after it is put in the mouth and swallowed? (esophagus)
15. Are all foods digested in the same place in the body? (no)
16. Fatty foods are digested only in what part of the body? (small intestine)
17. Where does the digestion of foods such as bread, cake, and potatoes start? (mouth)
18. How long does digestion take? (from 3 to 24 hours)

### Bran Muffin *Yield: 30 servings*

#### Ingredients:

Flour mix:
3 cups (390 g) whole wheat flour
9 Tbsp. (126 g) sugar
2½ Tbsp. (26 g) baking powder

4-5 large bananas, mashed
1 Tbsp. (15 mL) lemon juice
3 cups (255 g) unprocessed bran
2½ cups (285 g) chopped nuts or seeds
3 cups (720 mL) milk
6 eggs, beaten
2 cups (473 mL) vegetable oil

#### Equipment needed:

(sufficient number for each cooking station)

Paper muffin cups
Muffin pans
Small mixing bowls
Stirring spoons
Tablespoon (15 mL) measures
Teaspoon (5 mL) measures
Container each for flour mix and mashed banana
Washtub, drainer, hot and cold water, soap, dish towels, hot panholders, and oven

#### Preparation:

To do ahead:

- Stir together flour, sugar, and baking powder.
- Mash bananas and stir in lemon juice to prevent browning.
- Store flour mix and bananas in covered containers.
- Make name flags for everyone's muffin.
- Set up cooking stations with step-by-step directions.

#### Directions for individual muffins:

- Wash hands and work area
- Measure out into a bowl:
  1½ Tbsp. (13.7 g) of flour mixture
  1½ Tbsp. (7.9 g) of unprocessed bran
  1 tsp. (2.4 g) chopped nuts or seeds
  ½ Tbsp. (7.5 mL) milk
  ½ Tbsp. (7.5 mL) beaten egg
  1 tsp. (5 mL) oil
  1½ Tbsp. (22.5 mL) mashed banana
- Mix all ingredients together well.
- Pour into muffin cups. Stick on name flags.
- Bake at 400° F. (204° C) for about 20 minutes.
- Wash utensils and clean area.

# Lesson 11. Preventing Food-borne Illnesses

## An information acquisition lesson designed to help students identify two ways to prevent food-borne illnesses

### Objective

After completing this lesson, the students should be able to identify cleanliness and proper storage as two ways of preventing food-borne illness.

### Key Facts

Food-borne illnesses are produced in food by microorganisims such as salmonella and staphylococcus. Microorganisms found in food include yeasts, molds, bacteria, and protozoa. The symptoms of food poisoning include cramps, nausea, vomiting, and diarrhea.

Bacteria belong to the plant family and have characteristics similar to those of plants. Every bacterium is a potential hazard because of phenomenal growth rate. Constant vigilance must be maintained to keep harmful bacteria out of food and to destroy or control those that do enter by restricting or inhibiting their growth. It is known that bacteria need food, moisture, temperature, and time. All four conditions must be present for bacteria to grow.

*Food.* Bacteria eat by absorption. While the bacteria eat, they multiply by dividing frequently (as often as every 20 minutes); concurrently, they throw off waste material. The waste material of certain bacteria is poisonous to human beings and results in food poisoning. Foods which are known to support the rapid growth of illness-causing bacteria are (1) protein foods such as poultry, ham, eggs, meat, fish, and shellfish (shellfish must be purchased from approved sources because they absorb human waste bacteria from their food supply); (2) canned, nonacid foods such as green beans; and (3) creamed foods such as cream pies and custards that contain milk and eggs.

*Moisture.* Microorganisms need food in solution to be able to utilize it. A low moisture content inhibits bacterial growth. The drying of fruits, vegetables, milk, and many other foods are examples of drying to protect the foods from spoiling.

*Temperature.* Temperatures ranging from 40 to 140° F. (5 to 60° C) are the most favorable for bacterial growth. A temperature of 40° F. (5° C) or below will retard bacterial reproduction. Bacteria may survive temperatures below freezing, but cooking at temperatures between 165 and 212° F. (74 and 100° C) will destroy most organisms causing illness. However, some harmful toxins produced by these bacteria are not destroyed at this temperature. The implications for food preparers are clear. Room temperature is usually around 70° F. (21° C), and kitchen temperatures range from 70 to 90° F. (21 to 32° C), a range that supports life and encourages growth of bacteria. Foods which may be invaded by harmful bacteria should not be kept at room temperature. If they are to be served cold, they must be cooled quickly to 40° F. (50° C) or below and kept cold until served. (For cooked foods to cool quickly, they should be placed in shallow containers with the food not over 3 inches deep, and refrigerated.) Foods that are to be served hot should be kept very hot, over 140° F. (60° C), until served.

*Time.* Bacteria need time to reproduce or to produce toxic wastes, and time is a condition easily controlled by food preparers. Ready-to-serve food should not stand at room temperature longer than absolutely necessary, and in no case longer than an hour. Control of temperature and time is recognized to be the most dependable and practicable way to kill bacteria or prevent their growth. One bacterium will become 250 thousand bacteria in six hours under favorable conditions. Fifteen thousand bacteria per mililitre is the maximum allowed for pasteurized milk.

| Procedures | Materials needed |
|---|---|
| 1. Introduce the students to "Sanitation Sam" by telling his sad story.<br>Sam is feeling sick and sad. Stomach hurts, head feels bad. The picnic lunch, it looked so good! Sam thought, "I ate more than I should." The picnic table was laden down with food from everyone in town. Hot and cold placed side by side, nothing covered, all outside. As Sam sat moaning, feeling sad, he knew exactly what he had. Food-borne illness is its name. Now Sam knows just what to blame. | |
| Using the thermometer chart, show the students the temperature danger zone for food. Ask the students, "What might have prevented Sam's problem?" | "Thermometer Chart," page I-23 |
| 2. Introduce "Smiling Sal" and tell the students her happy story.<br>Smiling Sal is quite a gal. Cleanliness is her constant pal. Dirt and germs she will abolish, cleaning counters to a glowing polish. A sink filled with hot water, soap, and bubbles, means dirty dishes have no germ troubles. Scouring pots and pans and dirty dishes give Smiling Sal one of her fondest wishes. Clean dishes, counter tops, and boards will grant to you a just reward. No germs to make you feel so bad, unhappy, sick, and very sad. Take Sal's advice, be neat and clean. Cleanliness and good health is reality, not a dream.<br>Ask the students what Sal has done to prevent food-borne illness. | |
| 3. Ask the students to cut out a picture of a food that should be kept hot and a food that should be kept cold. With a thermometer poster on the bulletin board, ask the students to place each food picture in the appropriate temperature zone on the bulletin board and explain why it belongs there. | Thermometer poster (drawn to resemble thermometer chart, page I-23)<br>Magazines<br>Scissors |
| 4. Optional: You may introduce the following activity by relating present food preservation practices to that of Columbus' day, when they "covered" food with spices.<br>Conduct an experiment to demonstrate the importance of refrigeration and covering food. Display foods in class and ask the students to predict what will happen to food items if they are left in the classroom for several days. List student responses on the chalkboard. | |
| a. Ask the students to suggest what can be done to keep food fresh and tasty for a period of time (e.g., one day and one week). Have the students, in small groups, prepare food for the experiment by placing on plates the following: | 12 small plates<br>2 plastic tumblers<br>1 roll plastic wrap |
| 1 piece of cheese covered and left on the classroom shelf<br>1 piece of cheese uncovered and left on the classroom shelf<br>1 piece of cheese covered and refrigerated<br>1 piece of cheese uncovered and refrigerated | 4 pieces of cheese |
| 1 tumbler of milk on classroom shelf<br>1 tumbler of milk refrigerated | ½ pint milk |
| 1 egg on classroom shelf<br>1 egg refrigerated | 2 eggs |
| 1 carrot whole, unpared, and left on classroom shelf<br>1 carrot whole, unpared, and refrigerated<br>1 carrot whole, unpared, wrapped and left on classroom shelf<br>1 carrot whole, unpared, wrapped and refrigerated | 4 carrots |

| *Procedures* | *Materials needed* |
|---|---|
| b. Have the students record changes from periodic observations (i.e., end of one day, two days, three days, and five days) on the Food Experiment Data Record. When the food has spoiled, as in the case of milk, the students should note when the food started to spoil before the food is discarded.<br>Students can test for egg freshness by placing an egg in a bowl of cool water. A fresh egg will stay at the bottom. The older egg absorbs air inside the shell, so one end will begin to float toward the top of the water.<br>c. Summarize the experimental findings with the class at the end of five days. Place two columns on the chalkboard; label one column "Foods That Need to Be Refrigerated" and the second column "Foods That Do Not Need to Be Refrigerated." Ask the students to place the names of the foods from the experiment in the correct column. Name other foods (e.g., yogurt, potato chip dip, macaroni salad, apple juice, baked beans, and tuna fish sandwich) and determine whether or not the students have identified the correct column. (All of the above foods, except unopened apple juice, should be refrigerated.) | "Food Experiment Data Record," pages I-24 and I-25 |

### Evaluation Suggestions

1. Place two columns on the chalkboard, one labeled "Foods That Need to Be Refrigerated," and the other column, "Foods That Do Not Need to Be Refrigerated." Have the students orally list foods that go in each column.
2. Have the students demonstrate how to get ready for a food tasting activity (e.g., clean desk and wash hands).
3. Have the students complete the work sheet, "Food-borne Illness," on page I-26. Check for the correct answers, as shown below.

### Food Service Involvement

1. Invite the food service manager to class to talk to the students about sanitation procedures used in the school kitchen and lunch area.
2. Arrange for the students to visit the lunch area prior to the serving of lunch to observe how hot foods and cold foods are kept before serving.

## Notes

**Answer Key:**

Food-borne Illness (page I-26)

1. Yogurt dip, ham sandwiches, macroni salad, and orange juice must be refrigerated. (Hot baked beans need to be kept hot, above 140° F or 60° C.)
2. Wash desks and wash hands
3. Keeping food at proper temperature, practicing personal hygiene, and sanitizing work surfaces and utensils during food preparation

# Lesson 12. Eating Improperly Stored Foods

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about eating improperly stored foods***

*Procedures*

**Discussion Sequence**

1. Inform the students that this lesson will give them a chance to share their feelings about eating food that has been stored improperly.
2. Tell the students that you are going to read them a letter from a girl just about their age. The name of the girl who wrote the letter is Leticia.
3. Ask the students to be thinking of ways Leticia can solve her problem as they listen to the letter.
4. Read the "Letter from Leticia."
5. Before asking the question, tell the students to remember to respect the ideas and feelings of others.
6. Inform the students that you are going to give them an opportunity to discuss the question as a class.
7. Present the discussion rules outlined in Chapter One.
8. Present the discussion question: What should Leticia do?
9. Conduct the discussion.

*Materials needed*

**Letter from Leticia**

Dear Boys and Girls,

My problem concerns my best friend, Kathy. We have been in the same class for two years. We go everywhere together. Sometimes I even spend the night at her house. It was one of those times that I noticed that Kathy's mom makes her sandwiches for lunch the night before. She has to do this because she works. That's okay, but then she leaves Kathy's lunch bag with the sandwiches in it on the counter near the warm stove overnight. I know that's okay when Kathy's mom makes peanut butter sandwiches, but I know that mayonnaise, meat, and cheese sandwiches can spoil if they are left in a warm place for several hours.

Kathy and I have begun sharing our lunches. I'll give her half of my sandwich, and she'll give me half of hers. Now I'm afraid to exchange sandwiches because I do not want to eat something spoiled. But I like Kathy and her Mom very much, and I hate to embarrass them, too. What should I do?

Signed,
Leticia
Leticia

What should Leticia do?

# Lesson 13. Identifying the Role of the Food Inspector

## An information acquisition lesson designed to help students identify the role of the food inspector

### Objective

After completing this lesson, the students should be able to identify where food inspectors (sanitarians) work and what they do.

### Key Facts

Food inspectors are trained in laws and inspection procedures. They check businesses that produce, handle, store, and market foods to make sure that health regulations governing food products are followed.

Some food inspectors check meat, poultry, and their by-products to make sure it is clean, free from disease, and safe to eat. Other inspectors may work for state or local governments. They check the cleanliness and safety of food and beverages produced in processing plants or dairies and served in restaurants, hospitals or schools, and other institutions where food is served. The inspector checks to make sure that food is handled, processed, and served in compliance with sanitation rules and regulations.

### Activities: The Food Inspector

| Procedures | Materials needed |
|---|---|
| 1. Ask the students to name places where food is produced, served, or sold and who is responsible for making sure that they are clean and sanitary. Write clean and sanitary on the chalkboard and discuss the differences in meaning. Explain to the students that they will be learning how food inspectors make sure the food we buy is clean and safe to eat. | |
| 2. Display a copy of the "Food Inspector's Check Sheet" on an overhead projector or distribute a work sheet. Have the students read some of the items. Ask the students what they would do if they saw many of these problems at the place where they were eating. Explain what a food inspector would do and the types of places where these inspections would be made. | Work Sheet: "Food Inspector's Check Sheet," page I-27 |
| 3. Give the students the work sheet "Dan's Dirty Diner" and have them make a list of all the things or people that are not clean or sanitary. After the students have made their lists, have them share the lists. Write on the chalkboard all the problems identified by the students. (Note the importance of clean hands and nails.) | Work Sheet: "Dan's Dirty Diner," page I-28 |

### Evaluation Suggestion

Have the students complete the work sheet, "Food Inspectors: Where and What," on page I-29. Check that the students have correctly identified where food inspectors work and what they do.

### Food Service Involvement

1. Ask the food service manager to share with the class the certificate of inspection for the cafeteria kitchen.
2. Invite the food service manager to class to discuss how the job of a food inspector affects the preparation of school meals.

## Notes

**Answer Key:**

Dan's Dirty Diner (page I-28)

Flies, fly swatter on counter, spilled food on counter, open jars of food, spilled food on work surface and floor, worker sneezing on food, worker scratching head, cook tasting from serving spoon, cook putting finger in pot, worker smoking, hole in screen door, milk left out of refrigerator, spilled food on burner, food stored on floor, mice and chickens in kitchen, garbage stored indoors, garbage can uncovered, garbage on floor, sweeping floor during food service

Food Inspectors: Where and What (page I-29)

1. a, d, e, g, h, j, k, l
2. c

## Chapter Three

# Grade Five Nutrition Lessons

The nutrition education lessons for grade five students were designed as a resource for administrators, teachers, school food service employees, and others who wish to offer instruction on food choices, factors influencing food choices, food-related careers, consumer competencies, and food handling. The lessons and activities can be used in their entirety or may be used selectively.

Each lesson activity provides a complete and detailed description of procedures and required instructional materials appropriate to the procedure.

# Lesson 1. Identifying Major Nutrients

***An information acquisition lesson designed to help students identify one major nutrient provided by each of the Basic Four food groups***

### Objective

After completing this lesson, the students should be able to identify the major nutrients in each of the four food groups.

### Key Facts

One way to make sure that all six nutrient groups (carbohydrate, fat, protein, minerals, vitamins, and water) are in the daily diet is to follow the Basic Four food guide. By eating a variety of foods, chosen from the Basic Four food groups in the correct amounts, a person is reasonably sure of getting most of the nutrients in the amounts needed for a healthy body. Although the nutrients are found in varying amounts in most foods, key nutrients can be identified in each of the following food groups:

| Food Group | Nutrient |
|---|---|
| Milk and Cheese | Minerals (calcium), protein, fat (whole milk products only), and water |
| Meat, Poultry, Fish, and Beans | Protein, fat, and minerals (iron) |
| Fruit and Vegetable | Vitamins A and C, water, and carbohydrate |
| Bread and Cereal | Carbohydrate and B vitamins |

### Activities: Basic Four and Nutrient Groups

| *Procedures* | *Materials needed* |
|---|---|
| This lesson requires knowledge of the Basic Four food groups and the six nutrient groups. A review is appropriate of the food groups, foods classified by group, the nutrient groups, and the functions of each group. | Review pages 5, 6, 8, and 12 in *A Resource Manual for Preschool, Kindergarten, and Elementary Teachers* and page 18 in this guide. |
| 1. Provide each student with an assortment of food pictures. (Use Dairy Council pictures or those on pages I-30 through I-35.) Ask the students to sort the pictures into four food groups. (If the Dairy Council pictures are used, write the four food group titles on signs and station them at four different tables. Ask the students to place their food pictures on the appropriate table. If the pictures on pages I-30 through I-35 are used for the sort, each student can use all of the pictures and sort each food into the food groups at his or her own desk or table.) As a review, record the correct classifications on an overhead transparency or chalkboard. | Food pictures (Dairy Council or pages I-30 through I-35) |
| 2. Have each student complete the work sheet, "Mystery Nutrients," for a review of addition and subtraction problems. By solving the arithmetic problems, students are able to discover the nutrient groups. Students can work with partners to solve the problems. After the students have completed the problems, list each of the six nutrient groups on the chalkboard and review the function of each nutrient group. | Work Sheet: "Mystery Nutrients," page I-36 |

<table>
<tr><th><em>Procedures</em></th><th><em>Materials needed</em></th></tr>
<tr><td>

| Nutrient group | Function |
|---|---|
| Protein | Build and repair tissue. |
| Carbohydrate | Provide energy. |
| Fat | Provide energy and carry some vitamins. |
| Vitamins | Regulate and maintain body functions. |
| Minerals | Regulate and maintain body functions. |
| Water | Carry nutrients in blood, help maintain body temperature, and aid in digestion. |

</td><td></td></tr>
</table>

**Activities: Sources of Major Nutrients**

<table>
<tr><th><em>Procedures</em></th><th><em>Materials needed</em></th></tr>
<tr><td>
1. Have the students construct a Nutrient Sort Game.

After the students have cut out the food pictures, ask them to sort the pictures into four food groups. As a group discussion, ask the students to name individually the nutrient group identified with a food picture and to name the food group associated with the food. Record the correct student answers on an overhead transparency or chalkboard in the following format:

| Milk and Cheese | Meat, Poultry, Fish and Beans | Fruit and Vegetable | Bread and Cereal |
|---|---|---|---|
| Calcium (milk) | Protein (chicken) | Vitamin C (orange) | Carbohydrate (bread) |

List the nutrient group under the appropriate food group heading; include the name of the food in parenthesis. See the example shown above. Continue individual responses until all nutrients and foods have been reported. Summarize the nutrients associated with each food group.
</td><td>
Nutrient Sort Game, directions on page 39

Food pictures, pages I-30 through I-35<br>Scissors<br>Index card (5 by 8 inches)<br>Stapler
</td></tr>
<tr><td>
2. Have each student complete the work sheet, "What's in It for You?" Students should identify the food group for each food listed on the work sheet. After the students have classified each food, inform them that one food in each set is the best source of the nutrient listed for the set (e.g., soybeans should be labeled meat group and a good source of protein). Ask the students to choose a food from each set that is the best source for each nutrient listed. Have the students star the correct answer (1. soybeans, 2. yogurt, 3. chicken, 4. tortilla, 5. corn oil, 6. broccoli, 7. carrots). Explain to the students that any one nutrient can be found in many foods and that foods within a Basic Four food group generally have the same nutrients. Summarize for the students the food groups and the corresponding nutrients listed on page 36.
</td><td>
Work Sheet: "What's in It for You?" pages I-37 and I-38
</td></tr>
<tr><td>
3. Have the students complete the "Nutrient Crossword Puzzle." Summarize the students' answers after the puzzles have been completed.
</td><td>
Work Sheet: "Nutrient Crossword Puzzle," page I-39
</td></tr>
</table>

**Evaluation Suggestions**

1. Have the students complete the work sheet, "Matching Nutrients and Sample Food Sources," on page I-40. Determine whether or not the students have correctly matched nutrients with the appropriate food sources.
2. Distribute the "Nutrient Know-How" work sheet on pages I-41 and I-42. Determine whether or not the students have correctly identified the major nutrient in each food group and have identified foods that are rich in specific nutrients.

**Food Service Involvement**

Ask the food service manager to provide the menus used for the lunch or breakfast program. Have the students classify the foods according to nutrients and food groups.

## Notes

**Answer Key:**

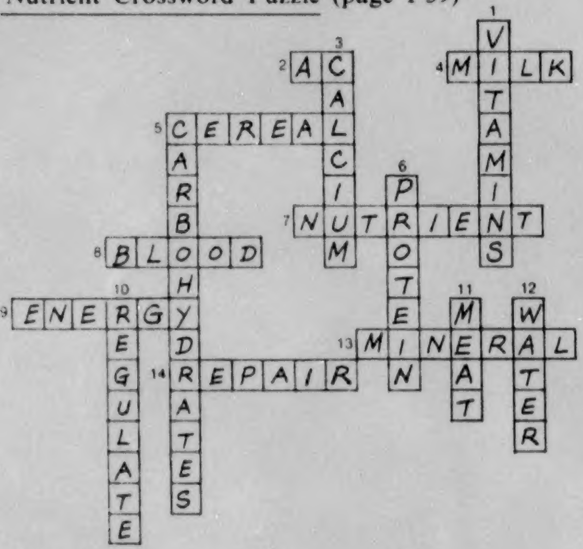
Mystery Nutrients (page I-36)

1. 11, 101, 6 = fat
2. 20, 101, 6, 9, 19 = water
3. 54, 101, 19, 100, 715, 160, 80, 200, 19, 101, 6, 9, 900 = carbohydrates
4. 744, 97, 867, 9, 19, 101, 76, 900 = minerals
5. 175, 97, 6, 101, 744, 97, 867, 900 = vitamins
6. 242, 19, 715, 6, 9, 97, 867 = protein

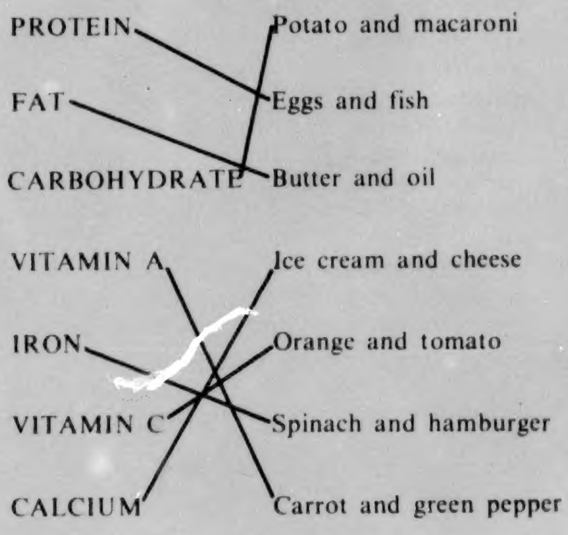
What's in It for You? (page I-37)

1. (fruit/vegetable), (meat, poultry, fish, and beans), (fruit/vegetable), (fruit/vegetable)
2. (meat, poultry, fish, and beans), (milk/cheese), (fruit/vegetable), (fruit/vegetable)
3. (meat, poultry, fish, and beans), (fruit/vegetable) (extra), (fruit/vegetable)
4. (bread/cereal), (meat, poultry, fish, and beans), (extra), (milk/cheese)
5. (milk/cheese), (extra), (meat, poultry, fish, and beans), (fruit/vegetable)
6. (fruit/vegetable), (meat, poultry, fish, and beans), (bread/cereal) (milk/cheese)
7. (fruit/vegetable), (meat, poultry, fish, and beans), (milk/cheese), (bread/cereal)

Nutrient Crossword Puzzle (page I-39)


1 VITAMINS
2 AC
3 CALCIUM
4 MILK
5 CEREAL
5 CARBOHYDRATES
6 PROTEIN
7 NUTRIENT
8 BLOOD
9 ENERGY
10 REGULATE
11 MEAT
12 WATER
13 MINERAL
14 REPAIR

Matching Nutrients and Sample Food Sources (page I-40)


PROTEIN
FAT
CARBOHYDRATE
VITAMIN A
IRON
VITAMIN C
CALCIUM
Potato and macaroni
Eggs and fish
Butter and oil
Ice cream and cheese
Orange and tomato
Spinach and hamburger
Carrot and green pepper

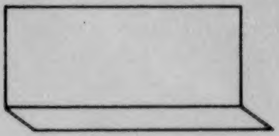
Nutrient Know-How (page I-41)

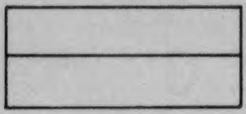
1.a, 2.b, 3.a, 4.c, 5.c, 6.a, 7.a
8.c, 9.a, 10.c, 11.b, 12.b, 13.b, 14.c

# Nutrient Sort Game

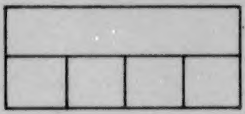
Take 9- by 12-inch paper.

Fold the lower one-third to make a pocket.





Staple as shown to make four small pockets.



Cut the small food pictures to fit the pockets. (See pages I-30 through I-35.) (Old food magazines may also be used.)

Sort the pictures into four food groups: Meat, Poultry, Fish, and Beans; Milk and Cheese; Bread and Cereal; and Fruit and Vegetable.

# Lesson 2. Exploring Values About Foods

***A values awareness lesson in which students explore their values about foods they like to eat***

| Procedures | Materials needed |
|---|---|
| **Activity Sequence**<br>1. Inform the students that the purpose of this lesson is to help them become aware of some of the values they have about the foods they like to eat.<br>2. Inform the students that during this activity they will make a mobile that symbolizes three of their favorite foods. Each student may make his or her own mobile, or two students may prepare a mobile together. (Option: students could make a collage instead of a mobile.) | |
| 3. Explain and demonstrate the following steps in the construction of a favorite food mobile.<br>a. Select three favorite foods.<br>b. Use rectangles prepared from construction paper or 3- by 5-inch cards. Draw a picture of a food on each side of the card. Write the name of the food, food group, and its main nutrient beneath each picture.<br>c. Construct the mobile. (See page 41.) | Construction paper<br>Yarn or string<br>Scissors<br>Glue<br>Crayons<br>Coat hanger, one per student (Students can bring their own coat hangers from home.) |
| 4. Distribute scissors, glue, crayons, and string to the students.<br>5. Make construction paper rectangles or 3- by 5-inch cards available to the students.<br>6. Invite the students to begin work.<br>7. Circulate around the classroom and provide assistance to the students as necessary as they work.<br>8. Collect all of the materials and call the class to order after the students have finished. The remaining part of this activity may be done on the same day or the day following construction of the mobiles.<br>9. Ask a student to show his or her mobile to the class and name the foods shown. The teacher should invite the student to select one of his or her favorite foods and to give the reasons why he or she likes this food. Encourage the student to be specific in stating his or her reasons, such as "because it tastes sweet." Demonstrate this procedure for the students. For example, "The first symbol is a pizza. It is one of my favorite foods because it is so spicy."<br>10. Following the student's comment, respond by inferring one of his or her values about that food. The following examples will help to illustrate how inferring of values should take place:<br>a. If the student says, "Pizza is one of my favorite foods because it is so spicy," you could say, "It seems to me that one of your values or one of the things important to you about some of the foods you eat is that they are spicy, is that correct?" The student would then answer "Yes" or "No."<br>b. If the student says, "Since milk has so many vitamins in it, a glass of milk is one of my favorite foods," you could say, "Would it be fair to say that nutritional quality is one of your values for some of the food you eat?" The student would then answer "Yes" or "No." | |

| Procedures | Materials needed |
|---|---|
| c. If the student says, "I like oranges a whole lot because they are juicy and smell good too," you could say, "Would it be correct to say that one of your values for some of the foods you eat is its smell or aroma?" The student would answer "Yes" or "No." | |

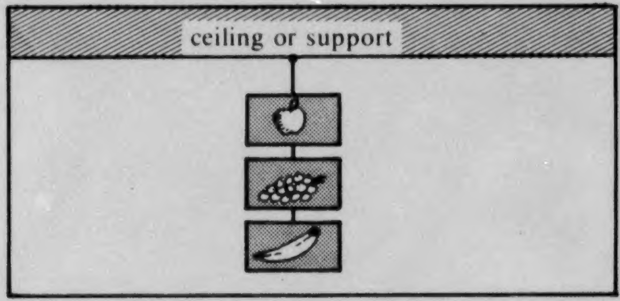
In responding to the students in this manner, you are labeling the reason(s) they cite as one of their values about that food. Posing this teacher response as a question provides an opportunity for the students to consider whether that is, in fact, one of their values about their food. In addition, you may wish to use the phrase "important to you" along with the word "value," as illustrated in the example, to help the students recognize that often "important reasons" are the same as values.

11. Invite other students to share their favorite food and reasons, responding by inferring their values about foods.

## Notes

### *Mobile Construction*

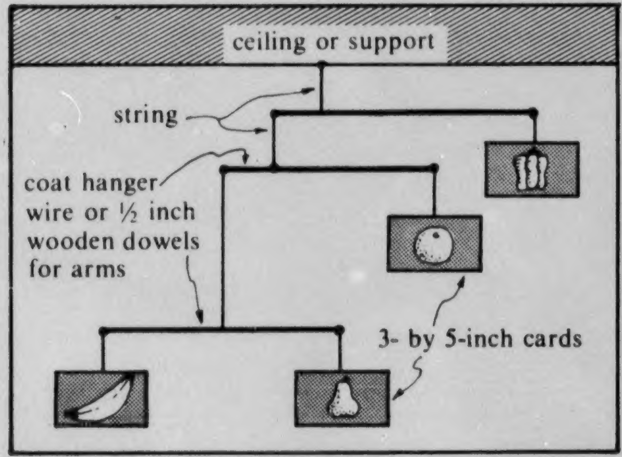
The simplest mobile is a series of cards with one hanging from the bottom center of the other from a coat hanger. A hole is punched in the center of the card for the string, or the string may be attached with tape.



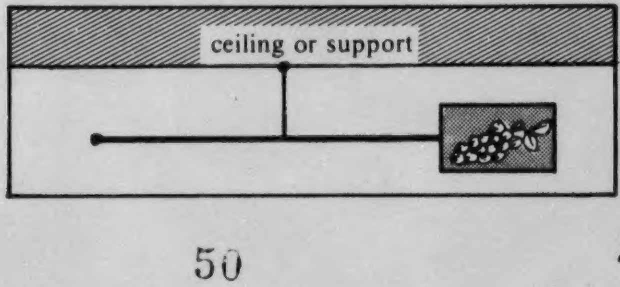
A more complex mobile may be constructed by using pivot arms.

These mobiles are assembled from the bottom up as follows:

Begin by attaching the cards to the bottom arm. Find the balance point and attach the hanging string. Attach the other end of that string to the arm above it and attach the card to the other end. Find the balance point of that arm and attach the hanging strings. (Put a drop of glue on the dowel where the string is tied to secure it.) Continue with the other arms in the same manner. Any number of arms may be used.



For some variation, the cards may be taped or glued directly to the end of the wooden dowel rather than hung from a string.



# Lesson 3. Identifying Food Preparation Methods

## An information acquisition lesson designed to help students identify two food preparation methods which maximize nutrient retention

### Objective

After completing this lesson, the students should be able to identify two ways in which vegetables may be prepared to retain nutrients.

### Key Facts

Nutrients in food are easily destroyed in the cooking process, especially those in foods high in the water-soluble B vitamins and vitamin C. Losses are increased when food is cooked for a long time, when large amounts of cooking liquids are used, and when food is cut into small pieces (the greater the surface area, the greater the loss). Extremely high temperatures also increase nutrient loss. Two methods of cooking food which maximize nutrient retention are steaming and stir-frying. Nutrient loss can be minimized by the following food handling and cooking practices:

1. Use fresh foods as soon as possible after purchase.
2. Store the produce at the proper temperature.
3. Avoid soaking the produce for long periods.
4. Leave the produce in large pieces rather than chopping.
5. Leave the skin or peel on the produce.
6. Steam or cook in a small amount of water.
7. Use a lid when cooking the vegetables.

### Activities: Cooking Methods

| *Procedures* | *Materials needed* |
|---|---|
| 1. Explain to the students the various ways foods may be prepared to retain vitamins. (See Key Facts.) Using broccoli, which is a good source of vitamin C, a water-soluble vitamin, discuss and demonstrate two methods (raw and steamed) of preparation for optimal vitamin retention. Have the students taste the vegetable raw and steamed. | Broccoli or other vegetable<br>Hot plate and steamer<br>Fry pan and steamer |
| 2. Have the students read the handout on cooking methods to preserve nutrients. Discuss the content and ask the students the following questions:<br>a. How long should a vegetable be cooked? Why?<br>b. Why should the leftover water be used?<br>c. How much water should be used?<br>d. Name two types of cooking that save nutrients. | Handout: "Save Those Nutrients, Partner!" page I-43 |
| 3. Have the students prepare zucchini pennies. Explain to the students that zucchini is a fair source of vitamin A and discuss the body's need for vitamin A. Mention that quick cooking of zucchini pennies helps retain the nutrients. Ask the students how they might save more nutrients. | "Zucchini Pennies" recipe, page I-44<br>Food supplies (biscuit mix, salt and pepper, grated cheese, grated onion, egg, grated zucchini, and vegetable oil)<br>Fry pan<br>Measuring spoons<br>Turner<br>Paper towels<br>Grater<br>Wire wisk<br>Custard cups |

| *Procedures* | *Materials needed* |
|---|---|
| 4. Have the students create a "Save the Vitamins" poster on drawing paper to be taken home to share with the family. The poster should include two ways to prepare vegetables which maximize vitamin retention. The posters could be displayed in the cafeteria before being taken home.<br>Optional: Make a bulletin board to illustrate "Save the Vitamins." | |
| 5. Have the students complete the "Hidden Words" work sheet. | Work Sheet: "Hidden Words," page I-45 |

**Evaluation Suggestions**

1. Have the students orally identify four ways vegetables may be prepared to maximize nutrient retention.
2. Have the students complete the word puzzle "Save Those Nutrients" on page I-46. Determine whether or not the students have correctly identified the key concepts of vegetable cookery.

**Food Service Involvement**

1. Invite the food service manager to discuss with the class the cooking procedures used in the school kitchen to preserve the vitamin content of vegetables.
2. Arrange with the food service manager for students to visit the school's cafeteria to observe the methods and equipment used to prepare the food for school meals.

## Notes

**Answer Key:**

Save Those Nutrients word puzzle (page I-46)

1. skin
2. soup
3. vitamins
4. overcook
5. quickly
6. whole
7. tender
8. water
9. save

## Hidden Words (page I-45)

Circle the Hidden Words.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| B | C | Y | R | P | P | W | N | O | N |
| O | N | R | S | R | M | N | A | V | U |
| O | I | F | R | E | S | H | I | E | T |
| F | M | R | M | P | I | C | H | R | R |
| D | A | I | U | A | R | A | W | C | I |
| I | T | T | F | R | Y | N | A | O | E |
| L | I | S | Z | E | A | I | D | O | N |
| B | V | O | S | A | P | P | D | K | T |
| D | P | M | A | E | T | S | E | N | E |
| E | C | M | S | C | K | A | N | G | L |
| S | H | A | N | D | L | I | N | G | B |
| T | O | S | S | M | G | Y | A | K | A |
| R | P | L | O | N | F | X | C | L | T |
| O | P | L | U | Q | I | M | O | O | E |
| Y | E | Q | R | B | S | O | A | K | G |
| W | D | Z | C | R | L | E | W | T | E |
| Z | G | Y | E | W | H | O | L | E | V |

After finding the hidden words, list three circled words that are ways foods can be prepared to save vitamins.

raw

steam

stirfry

# Lesson 4. Identifying Ways Aesthetic and Sensory Qualities Influence Food Choices

## An information acquisition lesson designed to help students identify two ways aesthetic and sensory qualities influence food choices

### Objective

After completing this lesson, the students should be able to identify how the sensory abilities of taste, smell, sight, sound, and touch influence food choices.

### Key Facts

Food choices are influenced by many things. The most obvious ones are taste and smell, but the way something looks may also have a bearing on food selections. Getting sick on a certain food or having an allergic reaction to a food are also factors which might influence what one eats.

- Human beings can distinguish only four taste sensations in the mouth (bitter, sweet, sour, or salty). The sense of smell determines the flavor of a food.
- Food is more appealing to the eye when the colors are bright and varied rather than dull and similar.
- Foods are more interesting in a meal when their shapes are varied rather than the same.
- Foods are more interesting in a meal when the textures are varied rather than the same.

### Activities: Aesthetic and Sensory Factors

| *Procedures* | *Materials needed* |
|---|---|
| 1. Show the students pictures of two or three meal combinations by using food models or pictures from magazines or other sources.<br>Examples:<br>a. Mashed potatoes, cauliflower, turkey slice, slice of white bread, and milk<br>b. Roast beef, green salad, bran muffin, strawberries, and milk<br>c. Hamburger patty, baked potato, chocolate pudding, and bran muffin<br>Ask the students to decide which meal they would prefer to eat. Ask the students who prefer each menu to raise their hand; have volunteers who respond give reasons for their selection. Put the key words from their responses on the chalkboard. (i.e, looks good, will taste good, has lots of colors, and has different shapes.) Emphasize that a number of factors influence our food choices: taste, smell, appearance (including variety of colors, textures, and shapes). | Food pictures from Dairy Council, food models, or food pictures from magazines |
| 2. Illustrate how smell can influence food choices. Blindfold one or two student volunteers. Have them smell two foods and indicate which food they prefer to eat. Have the student volunteers give a reason for their choice.<br>Example:<br>a. Onion or apple<br>b. Strong cheese or pineapple<br>c. Sauerkraut or banana<br>Emphasize that people tend to choose foods that smell good to them. The same foods do not smell good to all people. | Blindfold<br>Onion<br>Apple<br>Strong cheese<br>Pineapple<br>Sauerkraut<br>Banana |

| *Procedures* | *Materials needed* |
|---|---|
| 3. Illustrate how taste can influence our food choices. Conduct a taste test with all of the students participating. Have them taste similar foods and decide which they prefer. Record student responses on the chalkboard.<br>Examples:<br>a. Delicious apple versus tart green apple<br>b. Mild cheese (Monterey Jack) versus sharp cheese (Cheddar)<br>Emphasize that taste influences our food choices. Because of individual differences, our food preferences are not always the same. | Delicious apple<br>Tart green apple<br>Mild cheese<br>Sharp cheese |
| 4. Provide the students with "Map Out Your Tongue" work sheets. Have the students identify the areas of the tongue that provide the different taste sensations by participating in a tasting activity. Using syrup or sugar cubes (sweet), dill pickles or lemons (sour), unsweetened cocoa (bitter), and salted nuts (salty), ask the students to identify the part of the tongue where the taste sensation is the strongest. It may be helpful for the students to put small dabs of food on different parts of their tongues to determine where the sensation is the strongest. | Work Sheet: "Map Out Your Tongue," page I-47<br>Syrup or sugar cubes<br>Dill pickles or lemons<br>Unsweetened cocoa<br>Salted nuts |
| 5. Have the students write a short essay about their favorite food and how its taste, smell, and appearance influence their choice. | |

### Evaluation Suggestions

1. Have the students identify at least two sensory abilities that influence food choices.
2. Have the students complete the work sheet, "It's a Taste-In!" on page I-48. Determine whether the students can name correctly the five senses and can give an example of a food that can be identified by using each sense.

### Food Service Involvement

1. Invite the food service manager to discuss the aesthetic and sensory factors considered in meal planning.
2. Arrange with the food service manager to create a table setting with tablecloth or mats, cloth napkins, and centerpiece; ask the food service manager to create a second table setting with a television tray, paper plates, paper napkins, and plastic utensils. Discuss with the students how the environment affects food choices.

## Notes

**Answer Key:**

Map Out Your Tongue (page I-47)

A. bitter
B. sour
C. salty
D. sweet

It's a Taste-In (page I-48)

The five senses used to "taste" food are taste, smell, sight, sound, and touch. Some foods that can be easily identified by each sense are as follows:

Taste: radish, banana, watermelon, cheese, and tortilla
Smell: orange, peanut butter, strawberries, and pizza
Sight: ice cream, apple, orange juice, and hamburger
Sound: celery or carrots crunching, popcorn popping, liquid pouring, and meat sizzling
Touch: pineapple, grapes, artichoke, and avocado

# Lesson 5. Influencing the School Lunch Selection

## An information acquisition lesson designed to help students specify how the school lunch pattern contributes to nutritional health and how a student can influence selection of items for the school lunch menu

### Objective

After completing this lesson, the students should be able (1) to explain how the school meal pattern contributes to better health; and (2) to state one way in which a student can have an influence on the school lunch selection.

### Key Facts

The school lunch menu is prepared by a menu planner, nutritionist, or the director of the school food services program on the basis of the children's food likes and dislikes.

The food service director must keep in mind the school lunch pattern requirements as well as color, texture, and taste appeal when planning lunch menus.

To operate an efficient and profitable feeding program, the food service director needs the opinions of the students about the lunches.

Food service employees are involved in menu planning, food purchasing and preparation, kitchen sanitation, and food handling.

The school lunch pattern contributes to the health of the children by providing:

1. Foods in each of the nutrient groups
2. Foods rich in vitamins A and C and iron
3. One-third of the Recommended Dietary Allowances (RDA)

The school lunch pattern consists of the following:

| Component | | Grades 4—12 age 9 and over (Group IV) | Specific Requirements |
|---|---|---|---|
| **Meat or meat alternate** | A serving of one of the following or a combination to give an equivalent quantity. | | • It must be served in the main dish or the main dish and one other menu item.<br>• Textured vegetable protein products, cheese alternate products, and enriched macaroni with fortified protein may be used to meet part of the meat/meat alternate requirement. Fact sheets on each of these alternate foods give detailed instructions for use. |
| | Lean meat, poultry, or fish (edible portion as served) | 2 oz (56 g) | |
| | Cheese | 2 oz (56 g) | |
| | Large egg | 1 | |
| | Cooked dry beans or peas | ½ cup (130 g) | |
| | Peanut butter | 4 Tbsp. (64 g) | |
| **Vegetable and/or fruit** | Two or more servings of vegetables or fruit or both to total | ¾ cup (177 g) | • No more than one-half of the total requirement may be met with full-strength fruit or vegetable juice.<br>• Cooked dry beans or peas may be used as a meat alternate or as a vegetable but not as both in the same meal. |
| **Bread or bread alternate** | Servings of bread or bread alternate<br>A serving is<br>• 1 slice of whole grain or enriched bread<br>• A whole grain or enriched biscuit, roll, muffin, etc. | 8 per week | •At least one serving of bread or an equivalent quantity of bread alternate must be served daily.<br>• Enriched macaroni with fortified protein may be used as a meat alternate or as a bread alternate but not as both in the same meal. |

| Component | | Grades 4—12 age 9 and over (Group IV) | Specific Requirements |
|---|---|---|---|
| | • ½ cup of cooked whole grain or enriched rice, macaroni, noodles, whole grain or enriched pasta products, or other cereal grains such as bulgur or corn grits<br>• A combination of any of the above | | |
| **Milk** | A serving of fluid milk | ½ pint<br>(8 fl oz)<br>(240 mL) | At least one of the following forms of milk must be offered<br>• Unflavored lowfat milk<br>• Unflavored skim milk<br>• Unflavored buttermilk<br>NOTE: This requirement does not prohibit offering other milks, such as whole milk or flavored milk, along with one or more of the above. |

**Activities: School Meal Pattern**

| *Procedures* | *Materials needed* |
|---|---|
| This lesson requires knowledge of the Basic Four food groups and nutrient groups. A review of the food groups, the representative foods in each food group, and the names of the nutrient groups is appropriate. | Review pages 5, 6, 8, and 12 in *Nutrition Education—Choose Well, Be Well: A Resource Manual for Preschool, Kindergarten, and Elementary Teachers,* and pages 18 and 36 in this guide. |
| 1. Present a summary of the history and background of the school lunch program. Inform the students that they will be analyzing school lunch menus to determine how they contribute to nutritional health. | National School Lunch Program, Appendix D |
| 2. Review with the students the four food groups, the representative foods in each group, and the number of servings needed from each food group. Distribute a copy of the district's monthly lunch menu, and ask the students to identify what food groups are included in the school lunch menu.<br>Review the six nutrient groups, and ask the students to identify the nutrient groups included in the school menu. | Handout: "Lunch Menu," page I-49<br>Handout: "Nutrients in the Food Groups," pages I-50 and I-51 |
| 3. Explain why certain foods are on the menu. State that this balanced lunch provides one-third of the recommended daily dietary allowances for the school-age child. Explain the school meal pattern requirements; also explain that USDA donated food commodities, such as cheese, canned fruits, vegetables, grains, and ground meats, are made available to schools at minimal cost. | |
| 4. Have the students keep track of the school lunch menu for five consecutive days. Using the School Lunch Menu Evaluation Form, have the students list the foods served each day in the appropriate food group and nutrient boxes. Have each student evaluate whether or not each lunch contains all food groups and nutrient groups. | Work Sheet: "School Lunch Menu Evaluation Form," page I-52 |

| Procedures | Materials needed |
|---|---|
| 5. Have the students make for the cafeteria wall a large bulletin board or poster which depicts the school meal pattern (sample included). Ask the students to label each part of the school lunch pattern and identify the nutrients in each part. Also, make two signs labeled vitamin A source and vitamin C source. Have the students collect or produce pictures of foods that will be served for lunch during the month to fit on the bulletin board or poster. Each day have students put up pictures of the day's menu in appropriate spaces, indicating sources of vitamin A and C when applicable. | Work Sheet: "School Lunch Pattern," page I-53<br>Bulletin board or poster supplies<br>Food pictures (from magazines or Dairy Council) |

**Activities: School Lunch Menus**

| Procedures | Materials needed |
|---|---|
| 1. Inform the students that they will be learning about the school lunch program and planning a menu from their favorite lunch foods. | |
| 2. Have the students invite a member of the food service staff to come to class and inform students on how the school lunch pattern was developed. Following the food service presentation, have the students, in a classroom discussion, identify their favorite foods from the school menu. Record them on the chalkboard. (Old menus may be used as a guide.) Using this list, have the students compose a letter to the food service director or cook/manager, identifying these foods as items they would like to have continued on the school menu. | Sample school lunch menu, page I-49 |
| 3. Have the students plan lunches for one day or week using the school lunch pattern. Ask the students to evaluate the choices, keeping in mind the following factors: cost, school meal pattern requirements, and suitability for cafeteria service. Then have the class write a letter to the food service personnel. Provide menu suggestions for changes and give reasons why these changes might or could be made. Forward the letters to the school cafeteria manager or director. | Work Sheet: "My Favorite Lunches for a Week," page I-54 |
| 4. Form a student advisory council (SAC) to pass information and opinions from the students to food service personnel. | Student Advisory Council Kit, Appendix C |
| 5. Discuss with the students ways in which they can influence the school lunch program (e.g., write letters, form a SAC, and invite the food service director or cook/manager to class to discuss menu selection). | |

**Evaluation Suggestions**

1. Have the students complete the evaluation form for a school lunch menu on page I-52. Determine whether or not the students have correctly matched foods on the menu with the appropriate food and nutritional categories and have evaluated each meal correctly.
2. Have the students write a short paragraph describing how they can influence the school lunch menu selections.
3. Ask the students to list in writing one way in which the school lunch menu contributes to health and one way in which a student can influence the school lunch menu.

**Food Service Involvement**

1. Have the food service manager talk with the students about how the school lunch menu is developed to provide one-third of the RDA (Recommended Dietary Allowances).
2. Ask the food service manager to demonstrate the use of portion control utensils.
3. Ask the food service director to publish students' menus and to serve a lunch chosen by the students.
4. Have the students plan a school lunch menu with the assistance of the food service manager or director.

# Lesson 6. Exploring Values for Choosing Foods

**_A values awareness lesson in which students explore their values for choosing food_**

| *Procedures* | *Materials needed* |
|---|---|
| **Activity Sequence**<br>Draw on the chalkboard a facsimile of the work sheet shown on page I-55. | Work Sheet: "Birthday Foods," page I-55 |
| 1. Inform the students that the purpose of this lesson is to explore some of their values about foods.<br>2. Explain to the students that they are going to plan their own birthday dinner. They may select from three to five foods. Provide an example by citing some foods you would want for your birthday dinner. Write your list on the chalkboard.<br>Ms. Smith's Birthday Dinner<br>Baked chicken<br>Fresh fruit salad<br>Ice cream | |
| 3. Distribute the work sheet and advise the students that they have ten minutes to write down the foods they will serve under the heading of "Foods." | Copies of work sheet: "Birthday Foods," page I-55 |
| 4. Have the students select a partner and talk about each of the foods they listed.<br>First, one student will share his or her menu and tell why each of the foods was selected. Point out to the students that they probably chose foods they like. Tell them that they should report what they like about each of these foods. Model this by reviewing the foods you listed earlier on the board, indicating your reasons for selecting each of the foods on your menu.<br>5. Have the students stand, select a partner, and begin sharing their food list.<br>6. Reconvene the class. Explain that you would like them to think back to the conversation they just had with their partner and to write down the qualities of each food on their food list. Model this by writing your reasons on your food list on the chalkboard under the heading, "Reasons for Choosing." Remind the students that they should write down their reasons for choosing the foods on their list, not their partner's reasons. Give the students three to four minutes to complete this task.<br>7. Have the students cross out the word "Reasons" on the work sheet and write the word "Values" above it. Model this process on the chalkboard. Note that the heading for this column now reads "Values for Choosing."<br>8. Point out that they stated some values about their foods when they listed their reasons for choosing. Write the following value statement on the board: One of my values for choosing (name of food) as a birthday food is that it is (value about that food). Inform the students that you are about to make a value statement about one of the foods on your list. Read the value statement, including the name of one of the foods on your list and the value cited. | |

*Procedures* | *Materials needed*

**Values Application**

1. Point out that values are used in making decisions. We use food values to make decisions about what to eat. Inform the students that they will be playing a short game to demonstrate this fact.
2. Ask the students to turn to their Birthday Foods work sheet and circle one of the values listed in the column Values for Choosing. Inform them that you will be reading a list of foods. After each food, ask the students to choose or reject the food, using only the value they circled.
3. Inform the students that you are now going to read the name of the first food on the list. If the food "fits" with their circled value, they should raise their hands.

Food List

spaghetti
carrot cake
raw carrots
pizza
banana
apple
yogurt
tortilla chips
lemonade

4. Name the first food (spaghetti) on the list. Ask the students who raised their hands to report the value they have circled. If a student cites a value that seems inappropriate for the food, you may invite him or her to explain why that food has that particular value for him or her. For example, "Billy, why do you see ice cream as crunchy?" "I only like ice cream with nuts in it." Next, call on several students who did not raise their hands and ask them to report the value they circled—which in their judgment was not appropriate for the food named. Continue in the same manner with other foods on the food list.
5. Make one or more of the following points about values and decision making as the students respond. These points may also be used as a summary or conclusion for the lesson, as follows:
   a. Different people may select the same food, but because of different values.
   b. Different people may select the same food because of the same values.
   c. Different people may reject a food because of the same or different values.

   Conclude the activity by reminding the students that people usually use several values when they choose a food they want to eat; i.e., a person might choose a taco for lunch because it is (1) crunchy; (2) spicy; (3) nourishing; and (4) quick.

# Lesson 7. Sharing Ideas, Opinions, and Feelings on Making Food Selections

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about making food choices***

| Procedures | Materials needed |
|---|---|
| **Discussion Sequence**<br>1. Inform the students that the purpose of this lesson is to explore their feelings about choosing foods when they are with friends.<br>2. Tell the students you will read them a story about four boys.<br>3. Explain that after you have read the story, you are going to ask them to share their opinions about what David should do.<br>4. Read the story, "Hot Dogs."<br>5. Present the discussion rules outlined in Chapter One.<br>6. Present the discussion question: What should David do?<br>7. Conduct the dicussion. | **Hot Dogs**<br>David went skating with his friends Michael, Randy, and Frank. Afterwards, they went to a fast food restaurant to get something to eat. David thought that a hot dog with sauerkraut was really what he wanted. He was just about to order when he heard his three friends making fun of sauerkraut. They were ordering plain hot dogs. David didn't know what to do. He would much rather eat a hot dog with sauerkraut, but he didn't want his friends to make fun of him. What should David do? |

# Lesson 8. Sharing Ideas on Food Shopping

**An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about how one chooses foods when shopping**

## *Procedures*

**Discussion Sequence**

A few days before the discussion, do the following:

1. Inform the students that they will be preparing to share ideas about shopping for food.
2. Explain that you would like them to ask their parents how they choose food and have them complete the statements on the opinionnaire.
3. Distribute the letter and opinionnaire. Tell students when the opinionnaire is due.

On the day of the discussion, inform the students that the purpose of the lesson is to give them an opportunity to explore their ideas about shopping for food.

1. Ask the students to take out their completed opinionnaires.
2. Read each statement and then ask for volunteers to read the response on their paper.
3. Keep the time for responses short—a minute or two each.
4. Tell the students these responses may help them with today's discussion.
5. Read the story, "Susie Goes Shopping."
6. Present the discussion rules outlined in Chapter One.
7. Present the discussion question: What would you do if you went shopping for food and the list did not include sizes or amounts?
8. Conduct the discussion.

## *Materials needed*

Copies of the letter to parents and "Opinionnaire" (fill in due date before duplicating), pages I-56 and I-57

**Susie Goes Shopping**

Susie Silvas was very excited on Saturday morning because her favorite aunt was coming to visit. She was helping her mother get the house cleaned. Suddenly, Mrs. Silvas remembered that she had forgotten to buy some of the food for their dinner. She sent Susie to the store with a shopping list and some money.

Susie went into the store and looked at the list. Her mother had not written down the sizes or amounts of food to buy, but Mrs. Silvas had taken Susie shopping many times before and taught her how to buy food. What would you do if you went shopping for food and the list did not include sizes or amounts?

# Lesson 9. Sharing Ideas on Candy and Soft Drinks

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about spending lunch money on candy and soft drinks***

| Procedures | Materials needed |
|---|---|

## Procedures

**Discussion Sequence**

1. Inform the students that the purpose of this lesson is to explore their feelings about buying candy and soft drinks with their lunch money.
2. Inform the students that you are going to read them a story about a boy named Frank.
3. Explain that after you read the story, you are going to ask them to share their feelings about the question.
4. Read the story.
5. Present the discussion rules outlined in Chapter One.
6. Present the discussion question: How do you feel about spending all of your lunch money on soft drinks and candy?
7. Conduct the discussion.

## Materials needed

**Frank's Lunch Money**

Frank was a boy about your age with brown hair and blue eyes. He was a little shorter than most fifth graders and usually seemed tired.

Some of the things Frank liked to do most were to watch TV, play card games, and draw. Frank really didn't play outside very much. He wasn't very good in sports, and he got tired very easily.

Frank's mother liked to have Frank eat the school lunch. Every morning she gave Frank just enough money so he could buy lunch.

Frank could hardly wait to start out for school. He was in a hurry to stop at the corner grocery store and spend his lunch money on soft drinks and candy bars. He would usually eat the food he bought as he walked to school.

During lunchtime at school, Frank would usually sit and draw pictures while his friends ate their lunch. When he really got hungry, he would try to get food from some of his friends. That worked okay for a while, but most of Frank's friends became angry because he always asked for their food.

Because Frank didn't eat lunch, he was usually starving by the time he got home from school and could hardly wait for dinner. After dinner, Frank would spend the evening watching television. He often fell asleep on the sofa before his bedtime, no doubt dreaming about what he was going to buy at the grocery store on the way to school the next day.

How do you feel about spending all of your lunch money on soft drinks and candy?

# Lesson 10. Identifying the Role of the Dietitian and Nutritionist

## An information acquisition lesson designed to help students identify the role of the nutritionist and dietitian

### Objective

After completing this lesson, the students should be able to describe the job of a dietitian and nutritionist.

### Key Facts

Nutritionists have specialized training in nutrition and the biological sciences and often combine the scientific basis of nutrition with the social sciences. This interdisciplinary approach gives a person the understanding needed to coordinate all of the social and scientific factors involved in solving nutritional problems associated with community nutrition jobs. Many jobs in community nutrition require an advanced degree in nutrition, public health, or related fields; these jobs, whether in the areas of teaching, research, or nutritional programs, are within governmental health, education, and social service programs at the local, state, national, and international levels.

Dietitians have specialized training in nutrition, biochemistry, food science, communication, and management techniques. To become a registered dietitian, a person must complete an internship or a program approved by the American Dietetic Association.

Once dietitians are registered, they generally seek employment in administrative, therapeutic, teaching, research, or public health/public service positions in clinics, hospitals, schools, or other similar institutions. The role for nutritionists and dietitians is growing in settings outside of the traditional hospital; for example, in state and federal nutrition programs, nutrition education, VISTA, Peace Corps, and Cooperative Extension Work.

### Activities: The Nutritionist/Dietitian

| *Procedures* | *Materials needed* |
|---|---|
| 1. Have a nutritionist or dietitian come to class and discuss his or her job. Contact the School Food Services Department, city or county Health Services Department, or local hospitals to locate a nutritionist or dietitian.<br>Have the speaker address the following questions:<br>a. What are the responsibilities of his or her job?<br>b. What school jobs are good experience for this type of work?<br>c. What kind of education is necessary for this type of job?<br>d. Name other jobs in the food service field. (Food service manager, food service worker, cook, waitress, and bus boy.) | |
| 2. Have the students interview, either singly or in teams, nutritionists and dietitians in the community. Have them ask the same questions listed in item 1 above. Have them report their findings to the class. | |

### Evaluation Suggestion

Have the students write a one-page diary describing what he or she would be doing if he or she became a dietitian or nutritionist for a day.

### Food Service Involvement

Invite a food service employee to explain to the students how a dietitian or nutritionist can participate in the food service programs available to students.

# Lesson 11. Setting Priorities for Career Selection

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about priorities in career selection***

| *Procedures* | *Materials needed* |
|---|---|
| **Discussion Sequence** | |
| 1. Inform the students that the purpose of the lesson is to give them an opportunity to discuss what is important in selecting a career. | |
| 2. Tell the students that you are going to distribute a sheet that lists the priorities a person might think about in choosing a career. Define priorities. | Work Sheet: "My Priorities in Career Decision Making," page I-58 |
| 3. Distribute duplicated sheets. | |
| 4. Tell the students that they will be ranking the items on the sheet by putting the number 1 next to the quality that is the most important to them in choosing a career, and number 2 next to the second most important quality, and so on. | |
| 5. Model the process on an overhead projector transparency or on the chalkboard, if necessary. | Transparency: "My Priorities in Career Decision Making," page I-58 |
| 6. Ask the students if they have any questions about the procedure, or about what the phrases or words on the sheet mean. Have the students individually rank their qualities. | Overhead projector or chalkboard and chalk |
| 7. Tell the students that after they finish they will be sharing this information with a partner. | |
| 8. Inform the students they will have about five minutes to discuss with their partner the reasons for their choices and to try to make the partner understand their reasons. | |
| 9. Tell the students to make sure to respect the ideas and feelings of their partner and to try not to put anyone down. | |
| 10. Assign partners or allow the students to choose their own. | |
| 11. Have the students meet with their partners and begin work whenever they are ready. At the end of seven minutes, ask the students to return to their regular seats. | |
| 12. Tell the students they will soon have a chance to discuss their feelings about choosing a career with the entire class. | |
| 13. Present the discussion rules outlined in Chapter One. | |
| 14. Present the discussion question: What would be important to you in selecting a career as a nutritionist or dietitian and why? | |

## Chapter Four

# Grade Six Nutrition Lessons

The nutrition education lessons for grade six students are designed as a resource for administrators, teachers, school food service employees, and others who wish to offer instruction about food choices, factors influencing food choices, food-related careers, consumer competencies, and food handling. The lessons and activities can be used in their entirety or may be used selectively.

Each lesson activity provides a complete and detailed description of procedures and required instructional materials appropriate to the procedure.

# Lesson 1. Identifying Food Sources of Carbohydrate, Protein, and Fat

***An information acquisition lesson designed to help students identify plant or animal foods that are a major source of carbohydrate, protein, or fat***

### Objective

After completing this lesson, the students should be able to identify plant or animal foods that are a major source of carbohydrate, protein, or fat.

### Key Facts

Most of the foods that we consume are obtained from either plant or animal sources and are composed of a combination of three nutrients: protein, fat, and carbohydrate. However, most foods can be identified as a major source of one of the three nutrients.

Foods from animals provide primarily protein and fat. Protein is a major nutrient in meat group and milk group foods, such as fish, meat, poultry, eggs, cheese, and milk. In addition, these foods contain varying amounts of fat. Of the animal foods that we consume, a few milk-group foods (e.g., yogurt, milk, ice cream, and buttermilk) also provide significant amounts of carbohydrate. Nutrients specified in addition to the major nutrient are called "helping nutrients."

Foods from plants provide significant amounts of carbohydrate in addition to lesser amounts of protein and fat. Foods in the fruit/vegetable and bread/cereal groups provide carbohydrate as their major nutrient. Plant foods in the meat group include legumes (dried beans and peas), seeds, and nuts. Legumes, such as lentils, kidney beans, and split peas, provide carbohydrate as their major nutrient and significant amounts of protein. Seeds and nuts provide fat as their major nutrient; however, they also contain sizable amounts of protein and carbohydrate.

The following chart summarizes the food sources of protein, carbohydrate, and fat:

Food—Nutrient Chart

| Food group | Food source | | Nutrient | |
|---|---|---|---|---|
| | Plant | Animal | Major nutrient | Helping nutrient |
| Milk and Cheese | | milk<br>yogurt<br>buttermilk<br>cheese<br>ice cream | protein and fat (low and nonfat products such as buttermilk and yogurt do not provide fat) | carbohydrate |
| Meat, Poultry, Fish, and Beans | | fish<br>meat<br>eggs<br>poultry | protein | fat |
| | seeds<br>nuts | | fat | protein and carbohydrate |
| | legumes | | carbohydrate | protein |
| Fruit and Vegetable | all | | carbohydrate | |
| Bread and Cereal | all grain products | | carbohydrate | |

| *Procedures* | *Materials needed* |
|---|---|
| This lesson requires a knowledge of the six nutrient groups. The students should be encouraged to review the nutrient groups and food sources in the nutrient groups. | Review pages 5, 6, and 8 in *Nutrition Education—Chose Well, Be Well, A Resource Manual for Preschool, Kindergarten, and Elementary Teachers,* and page 18 in this guide. |
| 1. Ask the students to identify the names of the six nutrient groups. Brainstorm what the students already know about nutrients. List the six nutrient groups on the chalkboard as they are identified (protein, carbohydrate, fat, vitamins, minerals, and water). Inform the students that they will focus on food sources, both plant and animal, that provide protein, carbohydrate, and fat. | |
| 2. Have the students complete the work sheet, "Protein, Carbohydrate, and Fat." Review and discuss the students' answers after they have completed the work sheets. | Work Sheet: "Protein, Carbohydrate, and Fat," pages I-59 and I-60 |
| 3. Cut bulletin board letters that say "Nutrients for Good Health—Protein, Carbohydrate, Fat." Divide the bulletin board space into three sections. Have the students attach their food pictures from the work sheets to the bulletin board in the correct section, separating plant foods from animal foods. Arrange the sections as follows: | Construction paper<br>Bulletin board letters<br>Food pictures |

Nutrients for Good Health

| (Cover in green paper) | (Cover in yellow paper) | (Cover in orange paper) |
|---|---|---|
| (Plant foods) | (Plant foods) | (Plant foods) |
| Protein | Carbohydrate | Fat |
| (Animal foods) | (Animal foods) | (Animal foods) |

| *Procedures* | *Materials needed* |
|---|---|
| 4. Have the students prepare a snack that contains the three major nutrients studied. If possible, have parent volunteers help with the food experience. Discuss the nutrient contribution of the foods in "Three Nutrients in a Pocket" and whether they are of plant or animal origin.<br>Beans—protein (plant)<br>Yogurt—protein (animal)<br>Pita bread—carbohydrate (plant)<br>Cheese—protein and fat (animal)<br>Avocado—fat and carbohydrate (plant) | Work Sheet: "Three Nutrients in a Pocket," page I-61 |
| 5. Give the students "Word Search: Protein, Fat, and Carbohydrate." Have them find the names of foods that supply the three nutrients discussed in this lesson and list them under the proper nutrient heading at the bottom of the page. The first person to list five foods under each nutrient receives a prize such as a box of raisins. If this task is too difficult, give the names of the foods in the puzzle. (See answer key on page 61.) | Work Sheet: "Word Search: Protein, Fat, and Carbohydrate," page I-62 |

| Procedures | Materials needed |
|---|---|
| 6. Conduct a series of science experiments in which the students identify plant and animal foods as a major source of protein, carbohydrate, or fat. Have the students record the results of each of the experiments on the laboratory sheet provided. Discuss the results with the class and help the students draw conclusions concerning foods and food groups as a major source of protein, carbohydrate, and fat based on their experimental results. | "Laboratory Sheet," page I-63 |
| • *Protein*—Obtain nitric acid from a district high school science teacher. Be sure that you and your students receive instructions on how to safely handle nitric acid. Test the foods for protein by adding a drop of nitric acid to the surface. If protein is present, a yellow color will result from the drop of nitric acid. Test cheese, a hard-cooked egg, tuna, bread, milk, and an apple. (Note: foods with protein as a helping nutrient will also yield a yellow color.) | Nitric acid<br>Food samples for protein test (e.g., cheese, hard-cooked egg, tuna, bread, milk, and apple) |
| • *Carbohydrate*—Have the students test for carbohydrate (starch) by placing one-half teaspoon of cornstarch in a small glass. Fill the glass one-fourth full of water. Prepare another glass with an equal amount of water but with no starch. Add two drops of iodine solution to each glass. Observe what happens (iodine changes starch to a blue or black color).<br>Next, place one drop of iodine on bread, tuna, cracker, apple, hard-cooked egg, yogurt, or a slice of potato. Have the students identify the carbohydrate foods. (Note: Foods with carbohydrate as a helping nutrient will also undergo a color change.) Remember iodine is poisonous! Caution the students to never taste food that has been treated with iodine. | ½ teaspoon cornstarch<br>Iodine solution<br>2 glasses<br>Food supplies for carbohydrate test (e.g., bread, tuna, crackers, apple, hard-cooked egg, yogurt, and potato slices) |
| • *Fat*—Have the students place a small amount of lard or cooking oil on a square made from a brown paper bag. On another piece of the same paper, place a drop of water. Hold the papers up to the light and compare the differences. (Both the fat and the water will make a transparent spot. However, the spot made by the water will dry and not remain transparent.) Repeat the test using nuts, seeds, bologna, whole milk, salad dressing, cereal, bread, cheese, and peanut butter. It may be necessary to rub the food against the brown paper to produce any effect. Have the students note the foods that contain fat. (Note: Most foods with fat as a helping nutrient will also leave a translucent spot.) | Lard or cooking oil<br>Brown paper bags<br>Food sources for fat test (e.g., nuts, seeds, bologna, whole milk, salad dressing, cereal, bread, cheese, and peanut butter) |

**Evaluation Suggestions**

1. Using actual foods, empty food containers, or pictures of a variety of plant or animal foods, ask the students to identify the major nutrient (protein, carbohydrate, or fat) provided by each food.
2. Have the students complete the work sheet, "PFC Sort," on page I-64. Ask the students to write the name of each food in the column labeled with the food's major nutrient. Determine the correctness of the students' responses.

**Food Service Involvement**

1. Obtain copies of the school lunch menu from the food service director or manager and have the students use the lunch menus to identify plant or animal foods that are a major source of carbohydrate, protein, or fat.
2. Ask the food service director or manager for help in obtaining food supplies to use in the classroom food experiments.

## Notes

**Answer Key:**

Protein, Carbohydrate, and Fat (page I-59)

1. Fat, carbohydrate, and protein
2. For healthy bones and muscles
3. Dried peas, pinto beans, navy beans, chili beans, and black-eyed peas
6. Overweight, pounds, more, running, walking, energy, TV, fat, and sugar

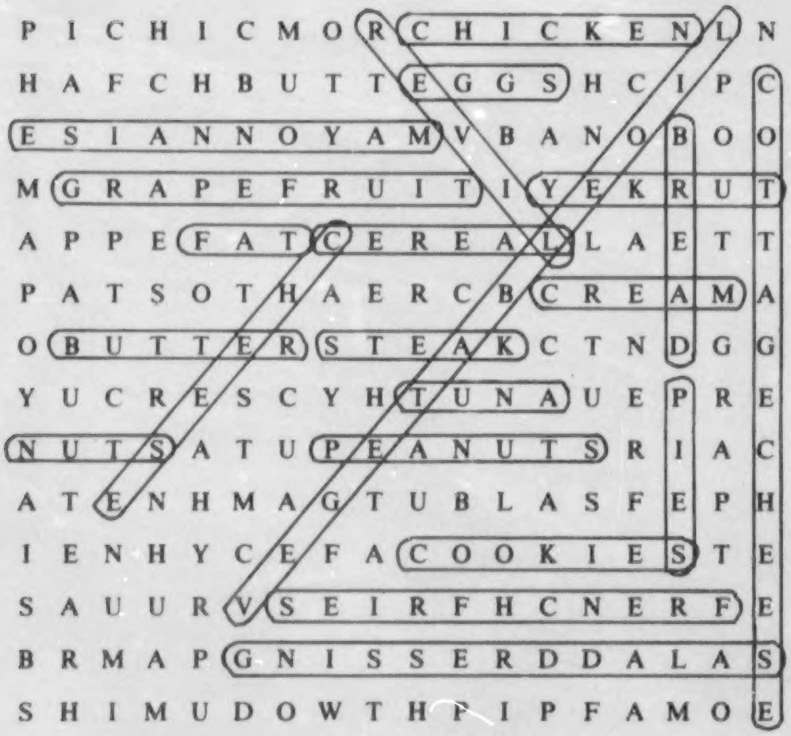
PFC Sort (page I-64)

Protein
1. chicken
2. liver
3. nuts
4. navy beans
5. beef
6. cottage cheese

Fat
1. butter
2. cream
3. mayonnaise
4. nuts
5. oil
6. ice cream
7. avocado
8. margarine

Carbohydrate
1. bread
2. apple
3. oatmeal
4. banana
5. artichoke
6. grapes
7. asparagus
8. carrots
9. tortilla
10. corn
11. avocado

### *Word Search: Protein, Fat, and Carbohydrate (page I-62)*



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P I C H I C M O R C H I C K E N L N
H A F C H B U T T E G G S H C I P C
E S I A N N O Y A M V B A N O B O O
M G R A P E F R U I T I Y E K R U T
A P P E F A T C E R E A L L A E T T
P A T S O T H A E R C B C R E A M A
O B U T T E R S T E A K C T N D G G
Y U C R E S C Y H T U N A U E P R E
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A T E N H M A G T U B L A S F E P H
I E N H Y C E F A C O O K I E S T E
S A U U R V S E I R F H C N E R F E
B R M A P G N I S S E R D D A L A S
S H I M U D O W T H P I P F A M O E
```

Protein Foods
- steak
- cottage cheese
- chicken
- tuna
- liver
- eggs
- turkey
- cheese
- nuts
- peanuts

Fat Foods
- butter
- cheese
- vegetable oil
- peanuts
- salad dressing
- mayonnaise
- cream
- fat
- nuts

Carbohydrate Foods
- bread
- cereal
- cookies
- grapefruit
- french fries
- pies

# Lesson 2. Planning Meals from Food Groups

### An information acquisition lesson designed to help students plan a meal that would be a part of a nutritious eating pattern

**Objective**

After completing this lesson, the students should be able to plan a meal that includes foods from each of the four food groups and foods that supply nutrients such as calcium, vitamin A, vitamin C, and iron.

**Key Facts**

To ensure that individuals obtain all the needed nutrients, specific vitamin-high and mineral-rich foods should be included in planned menus to ensure an adequate intake of vitamin A, vitamin C, calcium, and iron.

One way to plan a nutritious eating pattern is to select foods from each of the four food groups (Milk and Cheese, Fruit and Vegetable, Bread and Cereal, and Meat, Poultry, Fish, and Beans).

Nutrients are usually found widely distributed in foods, and persons can obtain the nutrients needed for optimum health when a variety of different foods are included in planned menus. For nutrients in specific foods, see pages I-50 and I-51. Special attention may be needed to make sure foods rich in vitamin A, vitamin C, calcium, and iron are included in the menu.

**Activities: Menu Planning**

| *Procedures* | *Materials needed* |
|---|---|
| This lesson requires knowledge of the Basic Four food groups and nutrient groups. The students should review the food groups, the representative foods in each food group, and the names and functions of the nutrient groups. | Review pages 5, 6, 8, and 12 in *Nutrition Education—Choose Well, Be Well: A Resource Manual for Preschool, Kindergarten, and Elementary Teachers,* and pages 18, 36, 37, and 58 in this guide. |
| 1. Review with the students the four food groups by holding up pictures of food. Ask the students to classify the food by its food group. Have the students fill out the work sheet, "Which Food Group is Missing?" Discuss with the students how the food groups become a convenient way of planning menus. A menu is a list of foods combined for a meal such as breakfast, lunch, or dinner. | Food pictures from magazines or the Dairy Council.<br>Work Sheet: "Which Food Group Is Missing?" page I-65 |
| 2. Review with the students the nutrients—protein, carbohydrate, fat, vitamin A, vitamin C, calcium, and iron. Review major food sources of these nutrients by having the students complete the work sheet, "Nutrient Check," or by conducting "Nutrient Tic-Tac-Know," a game patterned after Hollywood Squares. | "Nutrient Check," page I-66<br>"Nutrient Tic-Tac-Know" game, page 64 |
| 3. Have the students, as a group, orally identify foods that would make a lunch when combined together. List the foods, as suggested, on the chalkboard. | |
| Emphasize that menu planning consists of combining foods from the food groups that provide needed nutrients each day. Have the students evaluate whether or not the meal suggested in class has the necessary food groups and nutrients. (Note: Students may find the handout "Nutrients in the Food Groups," helpful in planning nutritious meals.) | Handout: "Nutrients in the Food Groups," pages I-50 and I-51 |

| *Procedures* | *Materials needed* |
|---|---|
| 4. Give the students scissors and old magazines and ask them to cut out food pictures that, when combined, will provide a meal which will represent each of the food groups and needed nutrients (protein, carbohydrate, fat, vitamin A, vitamin C, calcium, and iron). Students should list the foods in the menu at the top of the page and mount the pictures on blank, note-book-sized paper. Discuss the students' menus. | Magazines<br>Scissors |
| 5. Discuss how culture defines foods that we typically eat for breakfast, lunch, and dinner. For example, one breakfast pattern might consist of juice, cereal with milk, eggs, and toast. Ask the students to research what types of foods make up typical meal patterns in our culture and other cultures. Have the students classify foods from these cultural menus according to the four food groups. | |
| 6. Have the students collect, or list, menu selections from favorite fast-food restaurants. Ask them to combine selections that would make nutritious meals. Discuss whether it is possible to obtain good sources of calcium, iron, vitamin A, and vitamin C from fast-food restaurants. Have the students suggest ways that the menu selections can be improved if such a change is necessary. | |

### Evaluation Suggestion

Have the students plan a menu for a class picnic. Be sure the menu has items from each food group and includes the nutrients studied (protein, fat, carbohydrate, vitamin A, vitamin C, calcium, and iron).

### Food Service Involvement

1. Invite the food service manager or director to class to discuss with the students the steps used in planning school menus.
2. Ask the food service personnel to assist the students in selecting an exemplary menu developed in class that meets the requirements of the school lunch pattern.

## Notes

**Answer Key:**

Which Food Group Is Missing? (page I-65)

1. Milk and Cheese
2. Bread and Cereal
3. Milk and Cheese
4. Fruit and Vegetable

Nutrient Check (page I-66)

Foods containing carbohydrate as a major nutrient are brown rice, tortilla, pancakes, raisins, muffin, oatmeal, and whole wheat bread.

Foods containing protein as a major nutrient are chicken, kidney beans, yogurt, cottage cheese, trout, roast beef, blue cheese, peanut butter, salmon, hard-cooked egg, hamburger patty, and cheddar cheese.

Foods high in iron are chicken, spinach, kidney beans, trout, raisins, roast beef, peanut butter, salmon, mustard greens, and hamburger patty.

Foods containing calcium are yogurt, cottage cheese, blue cheese, salmon (if bones are eaten), mustard greens, and cheddar cheese.

Foods that contain vitamin A or vitamin C are bell pepper (A and C), carrot (A), tomato (A and C), artichoke (A and C), green beans (A), spinach (A and C), corn on the cob (A), broccoli (A and C), watermelon (A), grapefruit (C), orange (C), lemon (C), mustard greens (A and C), pumpkin (A), apricots (A), hard-cooked egg (A), cantaloupe (A and C), strawberries (A and C), and cheddar cheese (A).

No foods are without marks.

Some foods are called "extra foods" because they do not fit into any of the other four food groups. Foods in this group are not good sources of protein, complex carbohydrates, vitamins, or minerals. They do, however, provide calories derived mainly from fat and sugars.

## *Nutrient Tic-Tac-Know*

### Materials needed

1. Chalkboard with Tic-Tac-Toe diagram (or use white outing flannel and dark seam binding to construct a permanent Tic-Tac-Toe diagram; use construction paper backed with sandpaper or other adhesive for the *Xs* and *Os*)
2. Nutrient Tic-Tac-Know statements, pages 65 and 66

### Directions

1. Select two students, or two small groups of students, for contestants. The remaining class members become the experts.
2. Have the first contestant (*X*) select a square on the Tic-Tac-Toe diagram. Then select an expert, or small group of experts, to respond to a Nutrient Tic-Tac-Know statement.
3. Read the statement to the expert. The expert will decide whether or not the statement is true or false and respond accordingly. (The expert may intentionally bluff an answer.)
4. The contestant either agrees or disagrees with the expert's response.
   a. If the contestant agrees with a correct response, the contestant wins an *X* in the chosen square.
   b. If the contestant agrees with the expert, but the expert is wrong in responding to the statement, the contestant loses the square and the opponent wins the square with an *O*.
   c. If the contestant disagrees with the expert and the expert was wrong, the contestant wins the square with an *X*.
   d. If the contestant disagrees with the expert and the expert was correct, the contestant loses the square and the opponent wins the square with an *O*.

   NOTE: If the opponent is awarded a Tic-Tac-Toe because of a wrong answer, he or she does not win the square automatically; rather, he or she must win the square with a correct answer.
5. Proceed with the game until someone wins a Tic-Tac-Toe. The contestant (or contestants) who loses the round becomes an expert and an expert (or group of experts) is selected to be the opponent for the next round.

## *Tic-Tac-Know Statements*

1. Calcium is found in the Milk and Cheese group. (True)
2. Iron is a mineral. (True)
3. Fortified cereals are a good source of calcium. (False)
4. Teenagers need less food than children. (False)
5. Trout is a kind of poultry. (False)
6. Enriched breads contain a lot of vitamin C. (False)
7. Carbohydrates are found in bread. (True)
8. Protein is used to repair body tissues. (True)
9. Fats can be found in meats, most cheese, and eggs. (True)
10. Carbohydrates contain amino acids. (False)
11. All people need to take vitamin pills. (False)
12. Vitamin C helps a person to see at night. (False)
13. Milk does not contain protein. (False)
14. Citrus fruits are high in vitamin A. (False)
15. Fruits are good sources of protein. (False)
16. B-vitamins are contained in foods from the Bread and Cereal group. (True)
17. Vitamin A is found in dark green and deep yellow vegetables. (True)
18. Citrus fruits are good sources of vitamin C. (True)
19. Vitamin A is found in fortified milk. (True)
20. Thiamin is found in the Bread and Cereal group. (True)
21. Carrots are low in vitamin A. (False)
22. A hard-cooked egg contains more protein than a raw egg. (False)
23. Tomatoes and strawberries contain vitamin C. (True)
24. Brown rice is a good source of carbohydrate. (True)
25. Yogurt is in the "Extra Group." (False)
26. Roast beef is rich in iron. (True)
27. Crab is considered seafood. (True)
28. Cottage cheese is high in calcium. (True)

29. Watermelon is a good source of vitamin A. (True)

30. Kidney beans are found in the Fruit and Vegetable group. (False)

31. Peanut butter is high in protein. (True)

32. Tortillas are found in the Bread and Cereal group. (True)

33. Fortified cereals are a good source of riboflavin. (True)

34. Toast has less carbohydrate than bread. (False)

35. Spinach and mustard greens are not high in vitamin A. (False)

36. Raisins are high in iron. (True)

37. Broccoli, lemons, and oranges are all high in vitamin C. (True)

38. Fortified milk is high in protein, calcium, and vitamin D. (True)

39. Artichokes contain carbohydrate. (True)

40. Cantaloupe is a good source of vitamin A. (True)

# Lesson 3. Exploring Values About Snack Foods

***A values awareness lesson in which students explore their values about snack foods***

*Procedures*

**Activity Sequence**

1. Inform the students that the purpose of this lesson is to explore some of their values about snack foods.
2. Begin the lesson by informing the students that they will be involved in a make-believe situation. The student committee at the junior high school that they will be attending next year has requested information from them about their preference for snack foods.
3. Organize the students into groups of five or six, assign work areas, and ask the students to move to those work areas. Once the students have settled down, distribute a copy of the letter from the junior high school Snack Food Committee, along with the response form. Ask someone in the group to read the letter aloud to the other group members. Then they are to work as a group to complete the response form.
4. Invite a member of Group 1 to report the five snack foods and reasons for choosing. After he or she has reported, indicate that their "Reasons for Choosing" are some of their values about snack foods. Ask the members of Group 1 to restate their values and record them on the chalkboard under the heading, "Values About Snack Foods."
5. Ask a member of Group 2 to report their five snack foods and related values. If values not already listed on the chalkboard are reported, add them to the list. If the students report values that are already listed, add a tally mark.
6. Continue in the same manner with the remaining groups adding new values or tally marks.
7. Direct the students' attention to the list of values and check marks on the chalkboard. Invite them to report any observations or conclusions they would like to make.

*Materials needed*

Letter from Snack Food Committee, page I-67

Work Sheet: "Response Form," page I-68

(Note that the letter from junior high school students was written for this activity by junior high school students. The letter or the memo may be modified if you wish.)

# Lesson 4. Using Unit Pricing in Purchasing Snack Foods

**An information acquisition lesson designed to help students use unit pricing to obtain the best buy when purchasing snack foods**

### Objective

After completing this lesson, the students should be able to compute price per unit or measure and to identify the best buy when given two similar products for comparison.

### Key Facts

Federal law requires that the label on certain items contain the name of the product, weight or measure, ingredients, and manufacturer's name and address. Some products have a standard of identity and do not have to list the ingredients on the labels.

Prices of the same product may differ according to the size and store. Unit pricing provides a way to compare two items of different amounts.

To compute the unit price, divide the price by the weight. Comparing unit prices can help in deciding which product is the best to buy.

### Activities: Calculating Price Per Unit

| *Procedures* | *Materials needed* |
|---|---|
| Students will need to have experience in decimal computation to complete this lesson. | |
| 1. Inform the students that unit pricing is a way to compare food products to find out which is the most economical buy. | |
| 2. Use the "Snack Foods" work sheet or actual snack foods, with prices visible, to demonstrate on the chalkboard how to find the price per unit measure. (Price divided by weight equals unit price.) | Work Sheet: "Snack Foods," page I-69 |
| 3. Ask for student volunteers to go one at a time to the chalkboard and calculate the unit price of given snack food items. The remainder of the students should solve the problems at their desks. | |
| 4. Using the items listed on the board, discuss why one snack food is a better buy than another snack food. Consider price, nutritional value, personal taste, and quality. | |
| 5. Have the students compute the unit price of given items on practice work sheets. | Work Sheet: "Unit Pricing," page I-70<br>Work Sheet: "Finding the Unit Price," pages I-71 and I-72 |

### Activities: Unit Pricing in Stores

| *Procedures* | *Materials needed* |
|---|---|
| 1. Inform the students that some stores give shoppers unit price information on the shelves holding the food product. If possible, show the students a sample of unit pricing commonly found in stores. Ask the students if they have seen unit pricing in the stores. Also, inform the students that unit pricing for products shows the cost per ounce or gram, cost per pound, or cost per pint, depending on the product. (Products such as nuts, raisins, and cereals have unit pricing by weight; products such as juices have unit pricing by liquid measure.) | Check with local grocery store to obtain unit pricing shelf stickers. |

| *Procedures* | *Materials needed* |
|---|---|
| 2. Have the students complete the work sheet, "Unit Pricing in the Store." Discuss the value of unit pricing by asking the students the questions on the work sheet. Have the students consider price, nutritional value, personal taste, and quality in their selection of the best buys. | Work Sheet: "Unit Pricing in the Store," page I-73 |

### Evaluation Suggestion

Have the students complete the work sheet "Which Is a Better Buy?" on pages I-74 and I-75. Determine whether or not the students are able to use unit pricing to select the best buy.

### Food Service Involvement

1. Ask the food service manager to visit the class and discuss why the district buys in bulk.
2. Ask the food service manager to bring a bulk container (e.g., peanut butter) with the weight and price attached. Have the students compute the unit price of home or retail size peanut butter and bulk peanut butter.

## Notes

**Answer Key:**

Which Is a Better Buy? (page I-74)

Peas: A = 6 cents
B = 7 cents

Bread: A = 6 cents
B = 4 cents

Carrots: A = 1 cent
B = 6 cents

Soup: A = 4 cents
B = 5 cents

# Lesson 5. Exploring Values About Food-Related Advertising

***A values awareness lesson in which students explore their values about foods-related advertising***

| *Procedures* | *Materials needed* |
|---|---|
| **Activity Sequence** | |
| 1. Inform the students that the purpose of this lesson is to help them become aware of some of their values about food-related advertising. They will also learn about some different ways food-related advertising is designed to appeal to people and to encourage people to buy the product. | |
| 2. Ask the students to cut out and bring to class food advertisements from magazines or newspapers a few days before the lesson. As they are brought in by the students, display the advertisements on a classroom bulletin board. Invite the students to study the various ads and select those that they like. | Food advertisements cut from magazines or newspapers |
| 3. Remind the students of the various food-related advertisements that they were asked to bring to class and the specific ads that they liked. | |
| 4. Invite the students to go to the bulletin board one at a time and identify the ad they like and comment about why they like it. If some of the students say they like the ad because of the product, try to get them to comment on the ad rather than their experience with the product.<br>As the various students respond, rephrase or restate their observations in the following terminology, as appropriate, to introduce these terms: appearance, ease of preparation, economy, health/nutritional value, information, and size. (See the work sheet, "Appeals of Advertising," for explanations for each of these terms.) | |
| 5. Distribute the work sheet, "Appeals of Advertising," and explain that most of their comments about why they liked the ads can be listed as one of the appeals of advertising on the work sheet. Give examples as necessary. For instance, the comment, "It has bright colors, the food looks delicious, people eating the food look happy or healthy," could be called the appeal of appearance. | Work Sheet: "Appeals of Advertising," page I-76 |
| 6. Familiarize the students with the various appeals of advertising by reviewing the ads brought in, and find one which is an illustration of each of the appeals listed. Students should write the brand name of the product advertised on the work sheet by the name of the appeal utilized.<br>To carry out this task, distribute an ad to each student, allowing him or her to study the ad a few minutes to identify the appeal; then have each student pass the ad on to his or her neighbor. Or, have the students go to the bulletin board in small groups at various times during the school day to find ads that illustrate the appeals. Or, the ads might be placed on different bulletin boards in the classroom and the students allowed to move around the classroom in search of one ad for each of the specified appeals.<br>As you prepare the students for this part of the activity, point out that advertisements frequently use more than one appeal to attract customers. The students may, therefore, choose to list the same ad | |

| Procedures | Materials needed |
|---|---|
| for two appeals. Stress that they are to try to find at least one brand name for each of the appeals listed. The students may also choose to list more than one brand name for each of the appeals. | |
| 7. Start with the first appeal listed on the work sheet and invite the students to name the ad that they felt illustrated that appeal. | |
| 8. Ask the students to put a star by the brand name on their work sheet that they feel has the most outstanding advertisement. Invite the students to share the ad they starred. | |
| 9. Point out that in selecting the best ad, they have really identified one of their values about food-related advertising. Have them complete the value statement at the bottom of the work sheet by writing in the ad appeal for the ad they starred. Model this activity for the students. | |
| 10. Invite the students who wish to do so to share their value statements about food-related advertisements. | |
| 11. To conclude the lesson, point out that different people have different values about food-related advertisements and, of course, that many people share the same values about food-related ads. | |
| **Values Application** | |
| 1. Inform the students that they are now going to have a chance to practice using their values about food-related advertising by actually making an ad for a new food product based on their values. | |
| 2. Distribute drawing paper and crayons, colored pencils, and/or paints. Instruct the students to first write two of their values about food-related advertising at the top of the drawing paper. Model this on the chalkboard. | Sheet of drawing paper for each student<br>Crayons<br>Colored pencils and/or paints |
| 3. Tell the students that they are going to write an ad for an imaginary new breakfast cereal called Super Crackels (or choose your own name or have the students invent their own product names). Their job will be to prepare an advertisement for this product which is based on their own values about food-related ads. Model this on the chalkboard or discuss the task further as necessary. | |
| 4. Indicate how much time will be allowed for work on the project. | |
| 5. Call the class to order at the end of the work time and ask for volunteers to share their values about food-related ads and the advertisement they designed. Model this process, (e.g., "Since one of my values about the appeal of advertising is health and nutrition, my advertisement tells you that the product is very good for building a healthy body. It also shows a jogger who is telling you about how good it is.") | |
| 6. Put the students' food-related ads up on the classroom bulletin boards for display, if practical. | |

# Lesson 6. Sharing Ideas About Junk Foods

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings as to whether or not they would eat junk food***

| Procedures | Materials needed |
|---|---|
| **Discussion Sequence**<br>1. Inform the students that the purpose of this lesson is to share opinions and ideas about certain foods.<br>2. Ask the students to raise their hands if they have heard the term *junk food.*<br>3. Ask the students to name foods that they think are junk foods. Write them on the board. No one should make a judgment at this time as to whether they belong on the list.<br>4. Ask the students if anyone thinks that some of the foods listed are not junk foods. Ask which ones and why.<br>5. Erase the name of the food from the board if the majority of the class agrees that particular foods do not belong on the list.<br>6. Ask the following discussion question: Are the "junk foods" you have identified foods you should never eat?<br>7. Present the discussion rules outlined in Chapter One.<br>8. Restate the discussion question: Are the "junk foods" you have listed foods you should never eat?<br>9. Conduct the discussion. | |

# Lesson 7. Examining Food Requirements of Different Individuals

**An information acquisition lesson designed to help students cite two reasons for the differences in the amount of food required by individuals**

### Objective

After completing this lesson, the students should be able to cite two reasons for the differences in the amount of food required by individuals.

### Key Facts

Everyone needs the same nutrients, but the amounts vary. Levels of activity, growth rate, size, sex, and age are factors in determining the amounts of food required by individuals. Females need the same amount of energy from food each day as males until about the age of ten. After reaching the age of ten, females generally require less energy from food than males. People of the same age with different body sizes (tall versus short) need different amounts of energy from food. More energy is needed from food for activities which use many body movements (e.g., running) than for activities which require few body movements (e.g., watching television). Certain physiological conditions, such as breaking an arm or being sick, require changes in the amount of nutrients and energy from food to assist in body repair.

### Activities: Food Needs

| *Procedures* | *Materials needed* |
|---|---|
| 1. Label two glasses of different sizes glass 1 and glass 2. Ask a student to fill both glasses with water. Then ask the student to pour the water into a measuring cup, recording the amount of water required to fill each.<br>Ask the class the following:<br>• Which glass needs more water to fill it completely?<br>• Why does this glass need more water to fill it completely?<br>Emphasize that the larger glass requires more water. Relate the experiment to size and why some people require more food than others. Ask the students to name other factors which influence the amount of food people require (activity, growth, age, and sex).<br>Optional: In place of water glasses, use small and large plants in two different sized pots, or pictures of small and large trees. | 2 drinking glasses of different sizes<br>Measuring cup |
| 2. Discuss how size, growth rate, activity, age, and sex influence the amount of food each person needs by using the handout, "Needs." | Handout: "Needs," page I-77 |
| 3. Have each student fill out the work sheet entitled "What Are My Eating Habits?" Have the students list what a friend or relative ate for one day (someone whose eating habits they are familiar with). After comparing the eating habits observed with their own eating habits, discuss the reasons for eating more, less, or the same amount of food. | Work Sheet: "What Are My Eating Habits?" pages I-78 and I-79 |
| 4. Ask the students to predict from given combinations of persons who would require more or less food, provided that all other conditions are equal:<br>a. Infant or parent<br>b. Male athlete or female athlete<br>c. Child who is 4 feet 8 inches tall or a child who is 3 feet 10 inches tall.<br>d. People who run long distances or people who read many books | |

**Evaluation Suggestions**

1. Ask the students to give orally two reasons for the differences in the amount of food required by individuals.
2. Have the students complete the work sheet, "Food Needs," on page I-80. Determine the accuracy of the student responses when they select the person who needs more food.

**Food Service Involvement**

Invite the food service manager to visit the class to discuss the amounts of food recommended for school meals and the reasons for the differing amounts of food for students in kindergarten through grade three and for students in grade four through grade twelve.

## Notes

**Answer Key:**

Food Needs (page I-80)

1. Thirteen-year-old girl—A growing girl is more active than a sixty-five-year-old man.
2. Teenage boy—A teenage boy is larger than a small child.
3. Professional football player—A professional football player is more active (uses more energy) than a teacher.
4. Construction worker—A construction worker is more active (uses more energy) than an attorney.
5. Professional dancer—A professional dancer is more active (uses more energy) than a TV announcer.
6. Nineteen-year-old male—A nineteen-year-old male needs more food than a twenty-five-year-old female because he is still in a growth spurt. He also needs more nutrients and is usually larger than a female of this age.

Item 4 Activities (page 73)

a. A parent would require more food than an infant because of size, but the infant would require more food per unit of body weight because the infant is undergoing an enormous growing spurt.
b. The male athlete would require more food.
c. The child who is 4 feet 8 inches tall would require more food.
d. People who run long distances would require more food.

# Lesson 8. Identifying Food by Nation

**An information acquisition lesson designed to help students specify one example of a food associated with a different country/community and its nutrient contribution**

### Objective

After completing this lesson, the students should be able to identify a food in the Bread and Cereal group that is typical in another country of the world and to tell what nutrients are contributed by the bread.

### Key Facts

Carbohydrate and B vitamins are the major nutrients in bread. Carbohydrate provides energy and helps with digestion. The B vitamins help with many of the body's chemical reactions that produce energy or build tissue.

People all over the world eat carbohydrate in different forms, many in the form of breads. Some of the breads of other countries or peoples are as follows:

1. Mexico—flour tortillas
2. India—chapattis
3. American Indian—Navajo fry bread
4. Israel—challah
5. Ireland—Irish soda bread
6. England—crumpets
7. Russia—kulich
8. Scotland—scones
9. Africa—maandazi
10. Sweden—limpa
11. France—pain ordinaire
12. Italy—grissini
13. China—bow (steamed buns)
14. Middle East—pita
15. Portugal—Portuguese bread

(Bread recipes are in Appendix E.)

### Activities: Breads From Around the World

| *Procedures* | *Materials needed* |
|---|---|
| 1. Ask the students the following questions, and record their answers on the chalkboard.<br>Think a moment about the foods you ate yesterday. What breads did you eat? If you did not eat any bread, what foods from the Bread and Cereal group did you eat? What major nutrients are found in bread? Why do we need them? Do you think most people have bread in their diet? Why? To introduce breads of different countries, refer to Appendix E. Ask the students to name some breads that people eat in other countries. Discuss with the students the differences in "breads" from other countries. List the answers on the chalkboard and complete them with information from Key Facts above. | Breads from Around the World, Appendix E |
| 2. List the countries from Key Facts on the chalkboard. By class vote, select five or six countries to research. Divide the class into groups, one for each country, and give each group a list of questions to research for a class presentation. (It may be necessary to review library research skills.) Allow adequate time for research. After the students have completed their research, have them make their class presentation. (You may wish to have only one presentation a day.) Have the students complete the Evaluation Form for each presentation. | Work Sheet: "Research Questions," page I-81<br>Work Sheet: "Evaluation Form," page I-82 |
| 3. Have the students complete the work sheet, "Breads from Around the World." | Work Sheet: "Breads from Around the World," page I-83 |

| *Procedures* | *Materials needed* |
|---|---|
| 4. Have each group prepare and/or bring samples of bread to class. Use recipes researched by students or those in Appendix E. If possible have parents or adult guests demonstrate how to make one of the breads from another country. | Bread recipes, Appendix E |
| 5. Hold a class "World Food Fair." With the information gathered in the research, have the students set up booths to display pictures, maps, artifacts, music, and so forth of their country. Have the students bring in enough samples of their country's bread to serve the class and other possible guests. (Samples could be baked at home or as a project in class or perhaps in the school kitchen with the help of the food service director or manager. Bread should be divided into tasting sizes.) Other foods served with the breads, such as fillings or spreads, may also be included. Invite parents and other adults or classes to view displays. | |

**Evaluation Suggestions**

1. Have the students complete the "Evaluation Form" on page I-82.
2. Ask the students to identify one type of bread that is typical of a country studied in class and to identify what that bread contributes to the nutrient intake.

**Food Service Involvement**

1. Have the food service manager explain how social and cultural factors influence the school lunch menu.
2. Ask the food service director to include articles from the students' research on the district's school lunch menus which are distributed to students and parents.
3. Ask the food service manager to feature in the school lunch the breads of the countries studied.
4. Ask the food service manager or director to provide copies of the school lunch menus for students to use in identifying the number of ethnic breads served at lunch.

## Notes

**Answer Key:**

Breads from Around the World (page I-83)

1. K
2. E
3. I
4. F
5. G
6. N
7. J
8. D
9. C
10. M
11. A
12. H
13. B
14. L
15. O

Suggested resource for student research: Time/Life Series, "Foods of the World."

# Lesson 9. Examining Food Distribution in the World

**An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about the disparity of food and population distribution in the world**

## Procedures

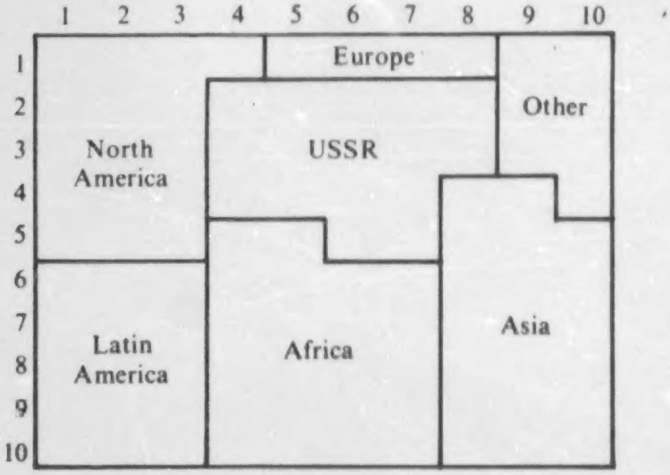
### To the Teacher

The following simulation game, page 78, "People and Food,"* will give the students the background information necessary to participate in this open-ended discussion.

### Teacher Preparation

1. Prepare one set of Ambassador Cards by cutting apart and gluing onto 3- by 5-inch index cards.
2. Label six paper plates to match population areas on page 78. Place on separate plates the number of peanuts listed in the "Real" column according to the food distribution chart on page 78.

   If there is a difference between real and ideal, put the difference in a sandwich bag and place it on the appropriate plate.
3. Mark off an area in the classroom with yarn and masking tape for each population. Label. (By using a square 10 feet by 10 feet, you may use the diagram below. Other dimensions may be used to fit floor space available. Percentages of land area may be used in determining sizes.)



### Lesson Introduction

1. Inform the students that they will play a simulation game and then have a chance to share their feelings about the problem presented in the game.

## Materials needed

6 Ambassador Cards, page I-84
1½ pounds (0.67 kg) of peanuts in shell
6 paper plates
6 sandwich bags
Yarn
Masking tape
6 signs labeled to match population areas

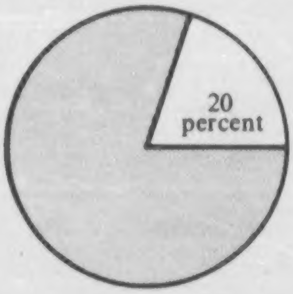
---

*Adapted from "Food for Thought" by Zero Population Growth

2. Review the six population areas on a map or globe. What do the students know about these areas: rich-poor, sparsely-densely populated, and climatic conditions? Explain to the students that the areas in this game will not be based on continents but rather by population areas (North America, Latin America, Europe, Asia, Africa, USSR).

| Population Area | Economic status | Population | Climate |
|---|---|---|---|
| North America | | | |
| Europe | | | |
| USSR | | | |
| Latin America | | | |
| Africa | | | |
| Asia | | | |

3. Review the math concept of percent. The pie graph is used in this activity.



**Game**

1. Introduce the game, "People and Food," by telling the students that they will have an opportunity to experience and observe the world food situation through this game.
2. Assign students to populate each of the six areas according to the chart below. Have the students move to their area of the room. (The remaining students may serve on the United Nations International Advisory Board. These students could be appointed before the others are chosen so they do not feel left out.)

Food Distribution Chart

| Area | Number of students | Ideal* (Total for group) | Real (Total on plate) | Difference (In bag) |
|---|---|---|---|---|
| North America | 2 | 6 | 6 | 0 |
| Europe | 4 | 12 | 12 | 0 |
| USSR | 2 | 6 | 6 | 0 |
| Latin America | 2 | 6 | 4 | 2 |
| Africa | 3 | 9 | 6 | 3 |
| Asia | 17 | 51 | 34 | 17 |
| Total | 30** | 90 | 68 | 22 |

*This figure is based on an optimum protein/calorie standard per person so that the well-fed person should receive three peanuts.

**United Nations International Advisory Board—extra students

| Procedures | Materials needed |
|---|---|
| 3. Assign one student to be the ambassador in each area.<br>4. Have each ambassador read the card about his or her area. After all six have been read, show the pie graph transparency that compares area and population. | Transparency master: "Population/ Land Pie Graph," page I-85 |
| 5. Distribute the world food resources (peanuts) per capita (students). The peanuts may be distributed to the ambassadors of the various areas according to both *ideal* and *real* world situations.<br>To demonstrate, hold up the paper plate with the *ideal* quantity to show citizens of each continent how much they should be getting. Then remove the portion of peanuts (in bag) to show the correct quantity for the *real* world. For example, you might say: Would the Asian ambassador please come up and get the food supply for Asia? If Asia was a well-fed region, all 17 students would receive three peanuts each, totaling 51 peanuts. Unfortunately, the students only get 34 peanuts (taken off bag with 17 peanuts). Now Mr. or Ms. Ambassador, would you please distribute these peanuts as you see fit or according to the political realities of your region? Asian citizens, if your ambassador distributes the food equally, each of you will get only two peanuts. (Repeat for other areas.)<br>(At this stage of the exercise, interesting things might happen. For example, how would the people feel if the ambassador kept too much food for himself or did not distribute it fairly among the citizens? Populations might even revolt.) Allow for discussion.<br>6. Tell the students to return to their seats. | |
| **Discussion Sequence** | |
| 1. Discuss with the students what happened in the game. If appropriate, discuss the events of the game in terms of revolution and immigration and the effects of revolution and immigration on the power structure. Who had the most peanuts? How did the others feel? Is this similar to what actually happens in the world?<br>2. Pose the discussion question: What can be done to equalize the food distribution with the population distribution?<br>3. Present the discussion rules outlined in Chapter One.<br>4. Restate the discussion question: "What can be done to equalize the food distribution with the population distribution?"<br>5. Conduct the discussion. | |

# Lesson 10. Identifying Factors that Affect the Yield and Quality of Crops

## An information acquisition lesson designed to help students identify two factors which affect the yield and quality of food crops

### Objective

After completing this lesson, the students should be able to identify two factors which affect the quality and yield of crops.

### Key Facts

Insects, or garden pests, can affect the yield and quality of food crops. Some insects are harmful because they eat the crops; therefore, the yield is less and of poorer quality. Some insects are helpful because they eat the harmful insects.

Insecticides kill harmful insects, increasing the yield and quality of crops. However, some insects build up a resistance to insecticides, making them useless. Also some insecticides do not break down easily and may kill other wildlife and beneficial insects.

Crop yields are influenced by weather conditions, use of fertilizers, and the plant variety grown.

### Activities: Garden Pests

| Procedures | Materials needed |
|---|---|
| 1. Write the list of vocabulary words listed below on the chalkboard. Ask the students to copy and define the words with the aid of a dictionary. Have the students share the definitions with other class members.<br>insecticide<br>resistance<br>persistent<br>wildlife<br>aphids<br>species<br>cannibal<br>yield<br>soil<br>fertilizer | Handout: "Garden Pests Vocabulary," page I-86 |
| 2. Have all the students in the class read "Pests in the Garden." Then read each of the following statements to the students and ask them to indicate if they agree or disagree with the statement. Students point thumbs up if they agree and thumbs down if they disagree.<br>• All insects feed on other insects.<br>• All insects eat plants.<br>• All insects are harmful to our food crops.<br>• Snails and slugs eat garden plants.<br>• Chemical insecticides can kill harmful insects and helpful insects.<br>• Insecticides disappear after they kill bugs.<br>• Cutworms are helpers in the garden.<br>• Insecticides can increase the quality of food crops.<br>• Some insects can be responsible for farmers getting less food (yield) from their crops.<br>• Plants that have been feasted upon by insects are of poorer quality than insect-free plants.<br>• Ladybugs and lacewings are helpers in the garden.<br>• A praying mantis eats plants. | Booklet: "Pests in the Garden," pages I-87 through I-94 |
| 3. Have the students complete the crossword puzzle "Pests in the Garden." | Crossword puzzle: "Pests in the Garden," page I-95 |

**Activities: Adverse Crop Production**

*Procedures*

1. Discuss what a plant needs for growth. Ask the students to read and complete the work sheet "Similarities in Plants."
2. Conduct a growing experiment with dried beans. Have the students plant 30 bean seeds in six or seven separate containers and care for the plants. One week after planting the beans, growth will be sufficient to begin the experiment. Have the students record their observations on their individual plant growth charts.
3. Choose one or more students to perform the following experimental steps:
   - Label each of six or seven experimental cups or dishes with the conditions under which it will be grown: (1) water, light, soil, no pests; (2) no water, light, soil, no pests; (3) no water, no light, soil, no pests; (4) water, no light, soil, no pests; (5) water, light, no soil, no pests (plant grown in water); (6) water, light, soil, pests (ideally, use covered aquarium for this sample); and (7) optional—fertilizer, water, light, soil, and no pests.
   - Record the following initial information for each experimental plant: color of leaves, number of leaves, and height of plant. (All students should record this data on their charts.)
4. On designated days, have the students record the leaf color, number of leaves, and plant growth on their charts.
5. At the end of the experiment, have the students draw conclusions about what contributes to plant growth.

*Materials needed*

Work Sheet: "Similarities in Plants," page I-96
6 or 7 plant containers (styrofoam cups, dishes or planters, and aquarium)
30 bean seeds (pinto, navy, kidney, or lima beans)
1 pound of potting soil
Work Sheet: "Plant Growth Chart," page I-97

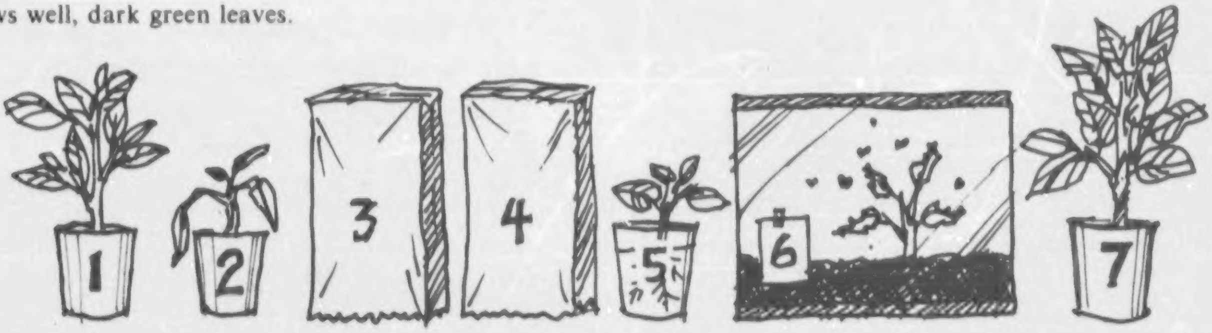
**Evaluation Suggestions**

1. Have the students complete the work sheet, "Vocabulary Match-Up," on page I-98. Determine whether or not the students' definitions are accurate.
2. Have the students illustrate on paper two things which affect the yield or quality of crops.
3. Given pictures of pests that are shown in "Pests in the Garden," have the students name the garden pest and tell whether it is helpful or harmful.

## Notes

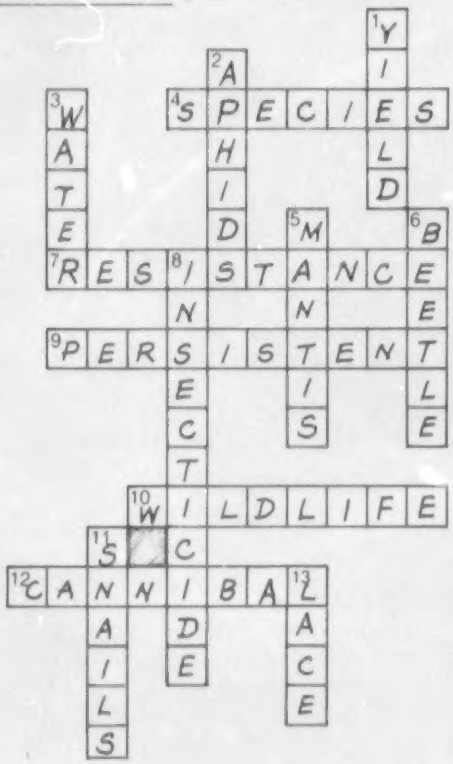
Expected outcomes of experiment:

1. Grows well, about 12 to 18 inches high, green leaves, will bear fruit.
2. Wilts and leaves turn yellow, droops, soil hard.
3. Droops, leaves turn yellow.
4. Leaves turn yellow.
5. Does not grow in height, but maintains green color.
6. Pests eat leaves.
7. Grows well, dark green leaves.



**Answer Key:**

Pests in the Garden Crossword Puzzle (page I-95)


1 YIELD
2 APHIDS
3 WATER
4 SPECIES
5 MANTIS
6 BEETLE
7 RESISTANCE
8 INSECTICIDE
9 PERSISTENT
10 WILDLIFE
11 SNAILS
12 CANNIBAL
13 LACE

Similarities in Plants (page I-96)

Some ways plants are alike: they all are living things; they must have food, water, light and air; most plants have roots, stems and leaves; plants get food and water from the soil; roots spread out in the ground to keep the plant from blowing away or falling over; stems of plants usually grow upward; green leaves manufacture food for the plants; plants can store food in their leaves, stems, roots and flowers; the flowers serve to attract insects for pollination; the flower is where the seed is contained or developed.

Vocabulary Match-Up (page I-98)

1. c
2. h
3. e
4. f
5. g
6. d
7. b
8. a

# Lesson 11. Identifying the Role of the Food Scientist

**An information acquisition lesson designed to help students identify the role of the food research scientist**

### Objective

After completing this lesson, students should be able to identify the job title of the person who develops new foods and to list three reasons why new foods are developed.

### Key Facts

A food research scientist is one who develops new foods. (See Food Scientist Fact Sheet, page I-99.) Reasons for developing new foods are as follows:

1. To fill people's needs and wants for variety (e.g., snack foods, flavored yogurt, frozen yogurt, sauces, condiments, and dressings)
2. To make food preparation more convenient (e.g., cake mixes, refrigerator doughs, instant cereals, puddings, and frozen prepared meals [TV dinners])
3. To meet special dietary needs (e.g., dehydrated food for backpacking, low calorie foods for dieters, and soy protein meat substitutes for vegetarians)
4. To improve the safety, keeping quality, or nutritional value of food (e.g., pasteurized milk, nonfat dry milk; canned, smoked, and dehydrated meats; fortified margarine, and enriched bread)

### Activities: The Food Research Scientist

| Procedures | Materials needed |
|---|---|
| 1. Ask the students about the foods pioneers brought with them as they crossed the country in covered wagons (e.g., beef jerky, flour, pickled fish, bacon, dried beans, sugar, salt, sausage, parched corn, potatoes; and dairy cattle). Have the students compare these foods with foods used in space travel (e.g., dehydrated, cubed, light-weight freeze-dehydrated foods, and beverages from collapsible dispensers). Sky lab astronauts ate ready-to-eat, dehydrated foods such as cream of tomato soup and scrambled eggs; dehydrated foods such as dry roasted peanuts, cookies, meatballs with sauce, turkey and gravy; and frozen foods like prime rib of beef and shrimp cocktail.<br>Ask the students how the needs of the pioneers and the astronauts influenced the kinds of food they had. (Pioneers could not depend on the availability of wild game and fish, on refrigeration, or stores at which to buy supplies; astronauts have weight and space limitations, need convenience in handling, need foods with high nutritional content, and must contend with weightlessness in space.)<br>Introduce the word "technology." | |
| 2. Have the students read the reprint, "Nutrition in the Shopping Cart." Ask the students to write their answers to the questions in the reprint. After reading and answering the questions, have the students discuss their answers in small groups. Relate the article to the need for new food products and the role of the food scientist in developing new food products. Specifically, discuss the reasons for developing new foods:<br>a. Needs and wants for variety<br>b. Convenience<br>c. Special dietary needs<br>d. Safety, keeping quality or nutritional enhancement | Handout: "Nutrition in the Shopping Cart," pages I-100 and I-101 |

| *Procedures* | *Materials needed* |
|---|---|
| 3. Ask the students the name of a person who develops new foods. Discuss the role of a food scientist, the duties of a food scientist, and the educational requirements for someone who wants to be a food scientist. | See "Food Scientist Fact Sheet," page I-99 |
| 4. Have the students copy the ingredients off the label of a food their parents did not have when they were young. Ask the students to tell why they think the product was developed (e.g., convenience, cost, to sell more food). Select a student to read the ingredients, and have the class guess the product. Discuss how a food scientist would have been involved in the development of the food. Repeat the exercise with other students. | |
| 5. Have the students write a report on an imaginary food they developed. Give its name and why and how it was developed. Ask the students to report on the various steps in developing new foods (e.g., researching, experimenting, testing for taste, producing, and marketing). | |

**Evaluation Suggestion**

Have the students prepare written answers to the following questions:

1. What is the job title of a person who develops new foods?
2. List three reasons for developing new foods.

**Food Service Involvement**

Invite the food service manager or director to visit the class to discuss how the research scientist affects the number and types of food available for school meals.

## Notes

**Answer Key:**

Quiz in Evaluation Suggestion

1. Food Scientist
2. a. To fill people's needs and wants for variety
   b. To make food preparation more convenient
   c. To meet specific dietary needs
   d. To improve the safety, keeping quality, or nutritional value of the food

# Lesson 12. Sharing Ideas About Future Foods

***An open-ended discussion lesson through which students have an opportunity to share ideas, opinions, and feelings about future foods***

| Procedures | Materials needed |
|---|---|
| **Discussion Sequence**<br>The purpose of the lesson is to explore the students' feelings about future foods.<br>1. Tell the students you will read them a description of possible foods in the year 2001 A.D. They will have an opportunity to share their ideas afterward.<br>2. Read the story reprint entitled "Dining in A.D. 2001."<br>3. Ask the students to think of reasons for and against future foods.<br>4. Present the discussion rules outlined in Chapter One.<br>5. Present the discussion question: Do you think food should be fabricated to make more food available to people? Why or why not?<br>6. Conduct the discussion. | Story: "Dining in A.D. 2001," *Reader's Digest* reprint, pages I-102 and I-103 |

# Minimum Proficiency Levels for Nutrition Education Preschool Through Grade Twelve

Through the enactment of state legislation and participation in federal child nutrition programs, California has made a major commitment to nutrition education. With financial support provided by the Child Nutrition Facilities Act (Senate Bill 120) and the National School Lunch Act and Child Nutrition Amendments (Public Law 95-166), California has established a comprehensive nutrition education and training program.

The goal of the Nutrition Education and Training Program is to enable individuals to develop the knowledge and skills necessary to make wise food choices, which will contribute to their overall health and well-being throughout their lives.

In an attempt to achieve systematically the goal of nutrition education, minimum proficiency levels for students were developed jointly by staff members of the State Department of Education, food service representatives, nutrition education specialists, teachers, and curriculum specialists. Those levels of performance are identified in the charts that appear on the following pages. The charts present an outline of expected performance in nutrition education for students enrolled in preschool, kindergarten, primary grades, upper elementary grades, and junior and senior high schools. The minimum proficiency levels support the nutrition concepts found in the *Health Instruction Framework for California Public Schools,* which was adopted by the State Board of Education in 1977. As nutrition education specialists, teachers, food service personnel, and aides design classroom activities, the minimum proficiency levels will provide a foundation for nutrition instruction, curriculum development, and evaluation.

Projects funded under the Child Nutrition Facilities Act or Public Law 95-166 will use the minimum proficiency levels as a basis for their nutrition education programs. Persons responsible for planning and implementing nutrition education programs should plan to address each performance standard required for students to achieve proficiency in nutrition education. They may, in addition, expand the performance standards to include additional activities.

| Topics | *Minimum standards of performance in nutrition* | |
|---|---|---|
| | *Preschool age/kindergarten* *(Ages three—five)* | *Early childhood* *(Primary grades, ages six—eight)* |
| A. Food Choices<br>Daily food intake is related to the attainment of optimum health.<br>• Food classifications make it easier to select foods that will help a person achieve a nutritionally adequate diet.<br>• A variety of foods can be combined to help ensure a nutritionally adequate diet that includes the nutrients that are necessary for optimum health. | *Students will:*<br>Name a variety of foods. | *Students will:*<br>Classify the foods in the Basic Four Food Groups.<br>Identify the number of servings needed daily from each of the Basic Four Food Groups.<br>Identify the food groups that should be included within the School Lunch Pattern. |
| • Foods contain the nutrients the human body requires to function properly, and the interrelationships among nutrients are important for promoting health. | Identify one reason why we need food. | Identify two diet-related health problems and the kinds of foods associated with the problems.<br>Identify two sequential steps in the process of digestion. |
| • Nutritional needs vary for individuals. | | Identify one activity which requires less energy (from food) and one activity which requires more energy (from food). |
| • Food is a component of the ecosystem, and many products can be combined for appropriate menus.<br>• Animal and plant products are substances of the food supply and are components of the ecosystem. | Classify foods as being of plant or animal origin. | Classify plant foods as fruits, vegetables, or grains.<br>Classify animal foods as meat, poultry, milk, eggs, or fish. |

*education, according to developmental levels of students*

| *Preadolescent*<br>*(Upper elementary, ages nine—eleven)* | *Adolescent*<br>*(Junior high, ages twelve—fifteen)* | *Young adult*<br>*(High school, ages sixteen—eighteen)* |
|---|---|---|
| *Students will:*<br>Identify one major nutrient provided by each of the Basic Four Food Groups.<br>Plan a nutritionally adequate meal that would ensure a nutritious eating pattern.<br>Specify one reason why the School Lunch Pattern contributes to nutritional health. | *Students will:*<br>Select menu alternatives to maintain a nutritionally adequate meal.<br>Select a school lunch that meets personal nutrient and caloric needs. | *Students will:*<br>Distinguish facts from fallacies concerning the nutritional value of foods.<br>Given limited food resources, select a nutritionally adequate diet based on nutrient criteria. |
| Name the six nutrient groups.<br>Identify at least one function for each of the six major nutrient groups.<br>Recognize the pathway of food during the process of digestion. | Recognize that a calorie is a measure of the energy value of food. | Identify the purpose of the recommended dietary allowances.<br>Identify the physiological processes involved in the digestion, absorption, and metabolism of nutrients. |
| Cite two reasons for the difference in the amount of food required by individuals. | Identify at least two effects food choices have on physical fitness and physical appearance. | Identify at least two ways that food habits and exercise, environment, work, and leisure activities interact to affect health.<br>Explain how stress influences nutritional needs.<br>Plan a nutritionally adequate diet that will result in a person's achieving or maintaining desired weight. |
| Identify plant or animal foods that are a major source of carbohydrate, protein, or fat. | Specify a combination of two plant foods that contain complementary proteins.<br>Identify one reason to include whole grains in a diet. | Identify one way a vegetarian can obtain a nutritionally balanced diet. |

| | *Minimum standards of performance in nutrition* | |
|---|---|---|
| *Topics* | *Preschool age/kindergarten* *(Ages three—five)* | *Early childhood* *(Primary grades, ages six—eight)* |
| B. Factors Influencing Food Choices<br>Life-styles, peers, and individual family resources reflect similarities and differences in food choices.<br>• Eating patterns are formed by interrelationships of physical, social, psychological, environmental, and cultural influences. | *Students will:*<br>Identify one practice that makes mealtime enjoyable.<br>Identify one influence on food choices. | *Students will:*<br>Identify two aspects of a school dining environment that may affect behavior.<br>Specify two nutritious snack foods that could be brought to school for class parties.<br>Recognize that families have different ways of selecting and serving food. |
| C. Food-Related Careers<br>Needs, roles, responsibilities, and educational requirements affect choices in food and health nutrition-related careers.<br>• Food-related occupations exist for society's purposes and contribute to society's ways of living. | Identify the roles of the farmer, food truck driver, storekeeper, and family members in food availability. | Identify two titles of people who process, prepare, or serve food.<br>Identify titles of two health professionals who provide advice on food selection in relationship to dental and general health. |

*education, according to developmental levels of students*

| *Preadolescent*<br>*(Upper elementary, ages nine—eleven)* | *Adolescent*<br>*(Junior high, ages twelve—fifteen)* | *Young adult*<br>*(High school, ages sixteen—eighteen)* |
|---|---|---|
| *Students will:*<br>Identify how home and/or social eating environments influence food selection.<br>Identify two ways aesthetic and sensory qualities influence food choices.<br>Specify one example of a food associated with a different country/community and its nutrient contribution. | *Students will:*<br>Identify how an emotional feeling influences eating behavior.<br>Identify how different cultural food patterns supply nutritionally adequate diets. | *Students will:*<br>Identify how social conditions influence eating behavior.<br>Identify one major nutritional problem in other areas of the world and a possible solution to the problem. |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | Identify the career possibilities in the following food-related fields: consumer food advocacy, agriculture, and food services. | Identify the educational requirements of two specific careers in nutrition, food technology, consumerism, and food safety.<br>Identify contributions of nutrition knowledge to other disciplines. |

| | *Minimum standards of performance in nutrition* | |
|---|---|---|
| *Topics* | *Preschool age/kindergarten* *(Ages three—five)* | *Early childhood* *(Primary grades, ages six—eight)* |
| D. Consumer Competencies<br>Effective utilization of existing resources may enhance the potential for satisfying individual and family nutritional needs and wants.<br>• Merchandising techniques influence food selection.<br>• The consumers, through their food choices, affect the production and distribution of food.<br>• Labeling provides consumers information to make satisfying food choices. | *Students will:*<br>Identify one purpose of television commercials.<br>Recognize what can be done to avoid being wasteful when serving food. | *Students will:*<br>Identify how advertisements influence selection of breakfast and snack foods.<br>Identify one way of decreasing food waste during lunch at school.<br>Given a food label, recognize the main ingredient in the product. |
| E. Food Handling*<br>The quality and safety of foods are influenced by handling, processing, and preparing of foods.<br>• Food production is influenced by technology and environmental factors.<br>• Food availability and quality is dependent upon food handing techniques.<br>• Sanitation practices in food processing and preparation are necessary for optimum health.<br>*Note: Handling means everything that happens to food while it is being grown, processed, preserved, stored, and prepared for eating. | Identify what makes plants grow.<br>Specify why and how persons should wash their hands before food is handled or eaten.<br>Identify one way of preparing food for eating.<br>Identify one way to store food that helps to keep it fresh and clean. | Identify two sanitation procedures that should be practiced when preparing food.<br>Identify two ways of cooking food.<br>Identify two foods that must be stored at a cool temperature. |

*education, according to developmental levels of students*

| Preadolescent<br>(Upper elementary, ages nine—eleven) | Adolescent<br>(Junior high, ages twelve—fifteen) | Young adult<br>(High school, ages sixteen—eighteen) |
|---|---|---|
| *Students will:*<br>Specify one way students can improve the environment in the school lunchroom.<br>Specify one way a student can have an influence on the school lunch menu selection.<br>Use unit pricing to get the best buy when purchasing snack foods. | *Students will:*<br>Specify one way a consumer can influence decisions made in the food industry.<br>Specify one way the student can influence the school food service program.<br>Identify the required and optional information found on food labels.<br>Specify two major factors that affect cost, quality, availability, or variety of food in the marketplace. | *Students will:*<br>Evaluate nutrition claims made in the merchandising and advertising of food.<br>Use nutritional labels to compare the nutritional value of foods.<br>Identify two criteria for evaluating the validity of nutrition information.<br>Identify two ways the consumer can decrease the food budget without sacrificing the nutritional quality of the diet.<br>Identify responsibilities of local, state, and federal agencies in determining requirements for school food service programs. |
| Identify two factors which affect the yield and quality of food crops.<br>Identify two ways to prevent food-borne illnesses.<br>Identify two ways of food preparation which maximize nutrient retention. | Identify two organisms that may cause food-borne illness and two foods that are particulary susceptible to such organisms.<br>Identify three ways of cooking food to maximize nutrient retention.<br>Identify three methods of preserving food at home.<br>Recognize one local, one state, and one federal governmental agency responsible for food sanitation and safety enforcement. | Identify one reason for the use of pesticides and one reason against the use of pesticides.<br>Identify reasons for two sanitation precautions that should be followed by food service personnel.<br>Specify one advantage and disadvantage of food processing. |

## Appendix B

# Minimum Proficiency Levels Addressed in State-Adopted Health and Science Textbooks

Many state-adopted health and science textbooks contain sections specifically related to nutrition education. The following charts are designed to identify those nutrition-related sections in state-adopted health and science textbooks that correspond to the minimum proficiency levels for nutrition education. The textbook sections may be especially useful in providing supplementary reading material, charts, pictures, and experiments to coincide with lessons contained in the *Nutrition Education—Choose Well, Be Well* series.

To locate appropriate text sections, find the nutrition proficiency in the left-hand column. Look across the chart to find the column for the health or science textbook series used in the classroom. If the textbook series contains a section relating to the proficiency, a reference is given to the grade level text in the series and appropriate page numbers. For some proficiency levels, there will be more than one reference; for others there may be no available information in the textbook. Occasionally, reference will be given to a textbook for a grade level different from that recommended for the lesson, thereby allowing teachers to use materials of an appropriate reading level or to selectively choose lessons from other grade levels to meet students' needs and interests.

# Relationship of Lessons to Minimum Proficiency Levels
## Grade 4

Text or Instructional Material, Health

| Proficiency<br>*Students will:* | *Health Decisions for Growth* Harcourt, Brace Jovanovich<br>*You Learn and Change* | *Human Development Institute* | *Values for Health* Fearon Pub.<br>Level A grade 4 | *Health and Growth Program* Scott Foresman | *You and Your Health Program* Scott Foresman | *The Healthful Living Program* Laidlaw Bros.<br>*Keeping Healthy* |
|---|---|---|---|---|---|---|
| Recognize the pathway of food during the process of digestion. | Grade 4: 200<br>Grade 5: 8-9 | No applicable lesson for grade 4–6 | Grade 4: 9-10<br>Grade 5:24—28 | Grade 4: 10-11<br>74—76<br>Grade 5: 135—153<br>157-158<br>Grade 6: 190—192 | Grade 5: 160—162, 167—175, 178-179, 194—196,<br>Work sheets<br>Grade 6: 52—54 | Grade 3: 108—112<br>Grade 5: 118—123 |
| Name the six nutrient groups and identify at least one function for each of the six major nutrient groups. | Grade 3: 66—70<br>102—105, 108, 110, 201,<br>Grade 4: 201<br>Grade 5: 66—69 | | Grade 4: 11,<br>47—51<br>Grade 5: 28—32<br>Grade 6: 30—34 | Grade 5: 163-164<br>Grade 6: 147-148 | Grade 4: 101—103<br>Grade 6: 118—122 | Grade 4: 112-113, 127, 132-133<br>Grade 5: 116—118<br>Grade 6: 122—126 |
| Identify two ways to prevent food-borne illnesses. | Grade 4: 54—58, 61, 62, 67, 70-71, 73, 74<br>Grade 5: 152—155, 156—159 | | | Grade 4: 77—80, 178-179<br>Grade 6: 52, 65—69 | Grade 6: 223, 254-255 | Grade 4: 103, 108 |
| Specify one way students can improve the environment in the school lunchroom. | Grade 4: 57 | | Grade 4: 53-54<br>Grade 5: 33 | | | Grade 4: 112, 119 |
| Identify how the home and/or social environments influence food selection. | Grade 4: 131, 164-165<br>Grade 6: 70-71 | | | Grade 4: 65—69 | | Grade 4: 109—112 |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | Grade 3: 80-81<br>Grade 4: 152<br>Grade 5: 153 | | Grade 5:77 | Grade 4: 62—75, 178-179, 198-199<br>Grade 5: 172-173<br>Grade 6: 65—69 | Grade 3: 182-183<br>Grade 4: 178-179, 188-189, 190 | Grade 4: 188, 194 |
| | Grade 4: 164-165<br>(Nutrient label information) | | | | | |

## Relationship of Lessons to Minimum Proficiency Levels
## Grade 5

Text or Instructional Material: Health

| Proficiency<br>*Students will:* | *Health Decisions for Growth* Harcourt, Brace Jovanovich<br>*Balance in Your Life* | *Values for Health* Fearon Pub.<br>Level B Grade 5 | *Health and Growth Program* Scott Foresman | *You and Your Health Program* Scott Foresman | *The Healthful Living Program* Laidlaw Bros.<br>*Growing Up Healthy* |
|---|---|---|---|---|---|
| Identify two ways aesthetic and sensory qualities influence food choices. | Grade 4: 32-33<br>Grade 6: 68-69, 72-73 | Grade 4: 46 | Grade 4: 74<br>Grade 5: 55–57 | Grade 4: 52-53<br>Grade 5: 59–64, 188 | Grade 4: 109–111, 119 |
| Identify one major nutrient provided by each of the Basic Four Food Groups. | Grade 5: 66–69, 72 | Grade 5: 28–32, 38<br>Grade 6: 30–34 | Grade 5: 163–165 | | Grade 4: 114–117<br>Grade 5: 130-131<br>Grade 6: 128 |
| Specify one way a student can have an influence on the school lunch menu selection. | Grade 5: 68 | | | | |
| Specify one reason how the school meal pattern contributes to nutritional health. | Grade 5: 66–69, 72<br>Grade 6: 64–67 | Grade 4: 47–51<br>Grade 6: 30–34 | Grade 4: 55–61, 81-82<br>Grade 5: 166-167 | Grade 4: 102, 107, 125<br>Grade 5: 183–187 | Grade 4: 113, 118<br>Grade 5: 129–133 |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | Grade 5: 77, 153 | Grade 5: 77 | Grade 4: 62—73, 173—179<br>Grade 5: 172-173<br>Grade 6: 65—69 | Grade 5: 193 | Grade 4: 188, 194 |
| Identify two ways of food preparation which maximize nutrient retention. | Grade 5: 155 | | Grade 5: 169-170<br>Grade 6: 160-161 | Grade 6: 129 | Grade 6: 137–139 |
| | | | | | |

## Relationship of Lessons to Minimum Proficiency Levels
## Grade 6

Text or Instructional Material: Health

| Proficiency<br>*Students will:* | *Health Decisions for Growth* Harcourt, Brace Jovanovich<br>*Toward Your Future* | *Values for Health* Fearon Pub.<br>Level C Grade 6 | *Health and Growth Program* Scott Foresman | *You and Your Health Program* Scott Foresman | *The Healthful Living Program* Laidlaw Bros.<br>*Health for Living* |
|---|---|---|---|---|---|
| Identify plant or animal foods that are a major source of carbohydrate, protein, or fat. | | Grade 6: 30–32 | Grade 5: 174 | | Grade 5: 116–118<br>Grade 6: 122-123 |
| Plan a nutritionally adequate meal that would ensure a nutritious eating pattern. | Grade 5: 67–69, 72<br>Grade 6: 84, 224 | Grade 4: 47–53<br>Grade 5: 28, 32<br>Grade 6: 34 | Grade 4: 55–61<br>Grade 5: 166–168<br>Grade 6: 147–157, 158–160 | Grade 4: 104—107<br>Grade 5: 183—187, 192<br>Grade 6: 118—127 | Grade 4: 118<br>Grade 5: 128–133<br>Grade 6: 126–131 |
| Cite two reasons for the difference in the amount of food required by individuals. | Grade 5: 64-65, 66<br>Grade 6: 56, 66, 72, 74, 78-79 | Grade 6: 35-36 | Grade 6: 148 | | Grade 5: 133<br>Grade 6: 132 |
| Specify one example of a food associated with a different country/community and its nutrient contribution. | | | | Grade 4: 66–69 | Grade 6: 133–136 |
| Use unit pricing to get the best buy when purchasing snack foods. | | | | | |
| Identify two factors which affect the yield and quality of food crops. | Grade 5: 71, 150-151, 156 | | Grade 4: 62–67<br>Grade 5: 171-172 | Grade 4: 62–66 | Grade 6: 150, 156-157 |
| Identify the role of sanitarian, nutritionist, dietitian, and research scientist. | | Grade 5: 77 | Grade 4: 62–73, 178-179<br>Grade 5: 172-173<br>Grade 6: 65–69, 144–148 | Grade 6: 223, 254-255<br>Grade 5: 195<br>Grade 4: 178-179, 188-189, 190 | |

## Relationship of Lessons to Minimum Proficiency Levels
### Grade 4

Text or Instructional Materials: Science

| Proficiency<br>*Students will:* | *Stem Science* Addison-Wesley | *Investigating in Science: Science* American Book Co. | *Concepts in Science: Curie* Harcourt, Brace, Jovanovich | *Concepts in Science: Newton* Harcourt, Brace, Jovanovich | *Exploring Science* 1976 Laidlaw |
|---|---|---|---|---|---|
| Recognize the pathway of food during the process of digestion. | | | Grade 5: 160—182, 147—150 | Grade 5: 265—269, 278—281 | Grade 5: 70—74 |
| Name the six nutrient groups and identitify at least one function for each of the six major nutrient groups. | Grade 4: 45—61 | Grade 4: 84—92 | Grade 5: 145—147 | | Grade 5: 76—84 |
| Identify two ways to prevent food-borne illnesses. | | | | | |
| Specify one way students can improve the environment in the school lunchroom. | | | | | |
| Identify how the home and/or social environments influence food selection. | | | | | |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | | | | | |
| | | | | | |

## Relationship of Lessons to Minimum Proficiency Levels
## Grade 4

Text or Instructional Materials: Science

| Proficiency<br>*Students will:* | *Exploring Science* 1979 Laidlaw | *The Elementary Science Program* Lippincott | *Learning Science Action* | *Gateways to Science* McGraw-Hill Webster Division | *Science: Understanding Your Environment* Silver Burdett Company |
|---|---|---|---|---|---|
| Recognize the pathway of food during the process of digestion. | Grade 5: 70–74 | *Grade 4: 29—46* | Grade 5: 340–357 | Grade 5: 106–112 | Grade 6: 296–298<br>Grade 4: 82–85 |
| Name the six nutrient groups and identitify at least one function for each of the six major nutrient groups. | Grade 5: 76–84 | | Grade 5: 362–369 | | |
| Identify two ways to prevent food-borne illnesses. | | | | | |
| Specify one way students can improve the environment in the school lunchroom. | | | | | |
| Identify how the home and/or social environments influence food selection. | | | | | |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | | | | | |
| | | | | | |

## Relationship of Lessons to Minimum Proficiency Levels
## Grade 5

Text or Instructional Material: Science

| Proficency<br>*Students will:* | *Stem Science*<br>Addison-Wesley | *Investigating in Science: Science*<br>American Book Co. | *Exploring Science*<br>1976 Laidlaw | *Exploring Science*<br>1979 Laidlaw |
|---|---|---|---|---|
| Identify two ways aesthetic and sensory qualities influence food choices. | | | | |
| Identify one major nutrient provided by each of the Basic Four Food Groups. | | Grade 4: 86–90 | Grade 5: 76–84 | Grade 5: 76–84 |
| Specify one way a student can have an influence on the school lunch menu selection. | | | | |
| Specify one reason how the school meal pattern contributes to nutritional health. | | | | |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | | | | |
| Identify two ways of food preparation which maximize nutrient retention. | | | | |
| | | | | |

## Relationship of Lessons to Minimum Proficiency Levels
## Grade 6

Text or Instructional Material: Science

| Proficiency<br>*Students will:* | *Stem Science*<br>Addison-Wesley | *Exploring Science*<br>1976 Laidlaw<br>1977 Laidlaw | *Learning Science*<br>Action |
|---|---|---|---|
| Identify plant or animal foods that are a major source of carbohydrate, protein, or fat. | Grade 4: 45—53 | Grade 5: 77—79 | Grade 5: 362—367 |
| Plan a nutritionally adequate meal that would ensure a nutritious eating pattern. | | | Grade 5: 371—376 |
| Cite two reasons for the difference in the amount of food required by individuals. | | | |
| Specify one example of a food associated with a different country/community and its nutrient contribution. | | | |
| Use unit pricing to get the best buy when purchasing snack foods. | | | Grade 5: 370 |
| Identify two factors which affect the yield and quality of food crops. | | | |
| Identify the role of the sanitarian, nutritionist, dietitian, and research scientist. | | | |

# Student Advisory Council Kit

### What Is an SAC?

A Student Advisory Council (SAC) is an organization composed of students who have an interest in learning about the school food service program, health, and nutrition.

The Student Advisory Council was started by the American School Food Service Association to encourage student involvement in the school lunch program. The United States Department of Agriculture supports the establishment of Student Advisory Councils for meeting the new regulation that mandates the involvement of students in the school food service program.

Student Advisory Councils are an excellent means for discovering student reactions to the food served in the cafeteria as well as their ideas and opinions on school food service. After all, students are the customers who support the school meal program.

### Steps to Start an SAC

**Organize**

1. First, orient the following groups about the SAC program using the organizational packet:
   a. All cafeteria managers
   b. All principals
2. Then, the cafeteria manager at each school should organize a meeting to include the school principal or vice-principal, the director of activities, interested teachers, school nurse, school food service representative, and any interested students. The following points should be covered at this meeting:
   a. Discuss whether or not the cafeteria manager has the time to act as the major SAC adult leader. If he or she is unable to find time to meet with SAC students regularly, ask for support from a teacher or other staff members who can be responsible for keeping the SAC active.
   b. The group should then discuss the best method for recruiting interested students for the Student Advisory Council.

One suggested method for reaching the student body is to include announcements in the daily school bulletin and in assembly announcements. Suggested announcements may include the following:

How many of you eat school lunch? How would you like to have some input into the cafeteria and the food served? If you are interested, come to the first Student Advisory Council (SAC) meeting on (date), in room (number) at (time), or sign up with the activities director or cafeteria manager as soon as possible.

What is an SAC? SACs or Student Advisory Councils are made up of students who are interested in health, nutrition, and food service. They give input on the school lunch and the cafeteria, and they promote good nutrition in their school. See what it's all about today in room (number) at (time).

After a satisfactory number of students (5 to 15) have been recruited, the cafeteria manager or adult leader should arrange the first SAC meeting.

Include all interested students, faculty, and school food service administrative personnel.

**Meetings**

1. First Meeting
   a. Inform the students about SACs, using materials from ASFSA and Florida Department of Citrus (see pages C-5 and C-6 for resource materials).
   b. Obtain a list of student names and phone numbers. This should be continued at each meeting therafter.
   c. Establish regular meeting times. Suggested times include: (1) early in the morning before school; (2) during the student government period; (3) immediately after lunch; and (4) after school.
2. Second Meeting - Organize the students.
   a. Discuss Constitution. (See page C-2.)
   b. Elect officers.
   c. Discuss methods for administering survey to student body in preparation for the third meeting in which council will identify concerns.

3. Third Meeting - Develop survey.
   Develop and administer a survey (See sample survey on pages C-2 and C-3.) to help identify concerns of the student body on food service and nutrition.
4. Fourth Meeting - Identify concerns.
   Tabulate the results of the survey and establish target areas of need based on the results of the survey.
5. Fifth Meeting - Plan for action.
   Plan for activities to meet the target areas.

**Act on Plans Made**

It may be helpful to establish a timeline for activities to help ensure that your activity goals are met.

**Evaluate Progress**

Near the end of the year, the council should design a progress evaluation based on the sample on page C-4. Each council should evaluate only the areas of concern that it has chosen to act on.

### Food Services Student Advisory Council Constitution Guidelines

ARTICLE I. Name and purpose

1. This organization shall be known as the (School name) Student Advisory Council (referred to as SAC in the remainder of these guidelines).
2. The purposes of this organization are as follows:
   a. To serve as a communications bridge between students, school food service programs, school faculty, administrators, and the community
   b. To familiarize the student body with the National School Lunch Program
   c. To improve all aspects of the school breakfast and lunch programs
   d. To develop a way to make fellow students aware of the importance that good nutritional habits can play in one's life
   e. To advance the ideals of SACs through the school district, state, and nation

ARTICLE II. Membership

This organization will be composed of all students at (School name) who have a common interest in the school food service program.

ARTICLE III. Officers

1. The officers of the SAC shall be chairperson, cochairperson, secretary, and/or treasurer.
2. There will also be a representative to the student body government.
3. There will also be a representative to the district Student Advisory Council.

ARTICLE IV. Duties of Officers and Members

1. The chairperson/cochairperson shall organize and preside at all SAC meetings.
2. The secretary/treasurer shall keep a record of all activities at the council meetings.
3. Other officers and members shall perform duties as established by each school SAC, according to individual council needs.
4. The representative to the student body government shall represent the SAC in the student government meetings and present any pertinent SAC business to the student government.
5. The representative to the district SAC shall represent the school SAC at the district Student Advisory Council Meetings.

ARTICLE V. Meetings

Meetings will be held on a regular basis as determined by the school SAC.

ARTICLE VI. Sponsor

An adult sponsor shall act as an adviser to the SAC.

ARTICLE VII. Guidelines and Amendments

1. Guidelines of the school SAC shall be drawn up according to the needs of the individual council.
2. Amendments to the SAC constitution shall be made according to the needs of the individual school and approved by the students, faculty adviser, and the school food service manager.

ARTICLE VIII. Source of Authority

All powers of the SAC are delegated to it by those directly concerned with the management of school food services. Therefore, all proposals will be subject to approval by the food service director.

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**Survey:**

School: ______________________ Boy: ____ Girl: ______ Date: ______________________

Grade: ______________________

The purpose of this survey is to assist the Student Advisory Council (SAC) at the school in identifying student ideas and concerns about school food service and nutrition.

| **Cafeteria Environment** | **Yes** | **No** |
|---|---|---|
| 1. Is it too noisy in the cafeteria? | ____ | ____ |
| 2. Do you enjoy the atmosphere of the cafeteria? | ____ | ____ |
| 3. Do you like the organization of the cafeteria? | ____ | ____ |
| 4. Are the tables and chairs comfortable? | ____ | ____ |

| | Yes | No |
|---|---|---|
| **Meal Service** | | |
| 1. Is the service of meals fast enough? | _____ | _____ |
| 2. Do you have enough time to eat? | _____ | _____ |
| 3. Are the meals served attractively? | _____ | _____ |
| 4. Are the cashiers and other food service workers pleasant? | _____ | _____ |
| 5. Are eating utensils easy to use? | _____ | _____ |
| **Cafeteria Food** | | |
| 1. Does the cafeteria food appeal to you? | _____ | _____ |
| 2. Do you like the taste of cafeteria meals? | _____ | _____ |
| 3. Are the hot foods hot enough? | _____ | _____ |
| 4. Are the cold foods cold enough? | _____ | _____ |
| **Nutritional Needs** | | |
| 1. Are you concerned about your health and nutrition when you select foods? | _____ | _____ |
| 2. Do you feel you have adequate nutritional knowledge? | _____ | _____ |
| 3. Do you eat breakfast before coming to school? | _____ | _____ |
| 4. Would you eat the breakfast offered at school? | _____ | _____ |
| 5. Do you feel that the school lunch is nutritious? | _____ | _____ |
| 6. Do you eat the school lunch regularly? | _____ | _____ |
| **Food Service Administration** | | |
| 1. Do you feel that the cost of cafeteria food is fair in relation to the amount of food you get? | _____ | _____ |
| 2. Do you feel that the menus have enough variety? | _____ | _____ |

Comments are welcome: ______________________________________________

______________________________________________________________

______________________________________________________________

## Student Advisory Council Activities

**Cafeteria Environment**

1. Work with art department to design and prepare colorful bulletin boards or displays on the cafeteria walls.
2. Work with school administration to obtain colorful tables and chairs.
3. Organize interesting, informative noon assemblies in the cafeteria.
4. Develop and display posters on decreasing noise and litter in the cafeteria.
5. Brainstorm with the cafeteria manager on more efficient or comfortable ways to arrange the cafeteria.
6. Develop a clean table award.
7. Visit other schools for ideas.

**Meal Service**

1. Brainstorm on ideas for speeding up the lunch line.
2. Work with the Food Service Department to select colorful serving dishes and utensils.
3. Promote days using special themes and menus; for example: Italian Day, Athletes' Day, Seniors' Day, Energy Saving Day, and Low-Cal Day.

**Cafeteria Food**

1. Promote menu items that are available but the students may not know about, such as fruit, yogurt, and special salads.
2. Have an advisory group work with the person who plans menus.
3. Conduct taste tests on new menu items.
4. Work with the cafeteria and food services to offer low calorie entrees.
5. Visit other schools for ideas.

**Nutritional Needs**

1. Display nutrition posters around the school.
2. Inform the student body of the benefits of school lunch through an assembly using a filmstrip or skit.

3. Post the calorie contents for each menu item offered.
4. Have a low-calorie lunch bunch.
5. Invite special speakers that are qualified nutritionists to speak to the student body.
6. Organize a school or district-wide nutrition fair.

**Food Service Administration**

1. Have district office staff discuss the cost of the school lunch and factors that are considered when determining cost.
2. Using members of SAC, form an advisory committee to discuss ideas and suggestions made by SACs with the food service department.
3. Have the nutritionist or food service director discuss how menus are planned using surplus commodities to promote an understanding of why some items are included on the menu.
4. Set up informational bulletin boards on Student Advisory Councils.
5. Work with the local or state chapter of the California School Food Service Association (CSFSA) to assist in planning a regional or statewide conference.
6. Promote school lunch by having members of the SAC attend the school's PTA meeting and discuss the benefits of school lunch.

### SAC Fund-Raising

The Student Advisory Council may sponsor fund-raisers, such as the following:

1. Refreshment concessions at athletic events and special functions
2. Car washes
3. Spaghetti feeds
4. Pizza sale (take orders, make pizza, deliver to door)
5. Submarine sandwich sale (take orders, make sandwich, deliver to door)

The following groups may be able to offer financial assistance to the SAC:

1. Student council or student government
2. Local CSFSA chapter
3. Local school district food service department

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### SAC Progress Evaluation

School: ______________________ Boy: ____ Girl: ____ Date: ______________________

Grade: ______________________

The purpose of this evaluation is to assist the Student Advisory Council (SAC) in identifying the council's effect upon the school food service program and the student body's nutritional concerns.

| | Yes | No |
|---|---|---|
| 1. Do you feel that the cafeteria environment has improved over the past school year? | ____ | ____ |
| 2. Do you feel that the meal service has improved in the past school year? | ____ | ____ |
| 3. Do you feel that food offered in the cafeteria has improved over the past school year? | ____ | ____ |
| 4. Do you feel that you have a better understanding of nutrition and how it relates to the school lunch and breakfast programs? | ____ | ____ |
| 5. Do you feel that you are more aware of how the school lunch program operates? | ____ | ____ |

Additional comments are welcome: ______________________________________________

______________________________________________________________________

## Student Advisory Council
## Resource List

| Medium | Resource | Source | Cost |
|---|---|---|---|
| Slide script presentation | 1. SAC Slide Show: How a high school in Florida organized a Youth Advisory Council | Florida Department of Citrus<br>Virginia "Ginny" Lindstrom<br>Nutrition Consultant<br>2128-B Galveston Avenue<br>San Jose, CA 95122<br>(408) 292-2054 | Free on loan |
| Filmstrip/cassette | 1. Exeter Story: In-service training materials for adults, and 4 filmstrips/cassettes. | Nutrition Know-How<br>48075 Colony Farm Circle<br>Plymouth, MI 48170<br>(313) 455-0530 | $89/each set |
| | 2. Lunchroom Learning: Adult in-service training focusing on student activities with school food service, and 4 filmstrips/cassettes. | Same as above | Same as above |
| Informational packet | 1. ASFSA Starter Folder | American School Food Service Association<br>4101 East Iliff Avenue<br>Denver, CO 80222<br>(303) 757-8555<br>(800) 525-8575 | First folder free; additional copies $1 |
| | 2. The SAC "How To" kit of materials | Florida Department of Citrus<br>Virginia "Ginny" Lindstrom<br>Nutrition Consultant<br>2128-B Galveston Avenue<br>San Jose, CA 95122<br>(408) 292-2054 | Free |
| Activity packet | 1. Florida O.J. Carnival<br>2. Florida O.J. Nutrition Fair<br>3. Florida O.J. Sports Spectacular | Florida Department of Citrus<br>Virginia "Ginny" Lindstrom<br>Nutrition Consultant<br>2128-B Galveston Avenue<br>San Jose, CA 95122<br>(408) 292-2054 | Free |
| Brochures | 1. Get on the Right Track with SAC, San Juan Unified School District | American School Food Service Association<br>4101 East Iliff Avenue<br>Denver, CO 80222<br>(303) 757-8555<br>(800) 525-8575 | Free |

Miscellaneous media, such as nutrition posters, brochures, and other information, are available from the following sources:

1. California School Food Service Association SAC/YAC Chairperson, P.O. Box 74188, Los Angeles, CA 90064, (213) 463-0252
2. USDA Food and Nutrition Service, 550 Kearny Street, San Francisco, CA (415) 556-4951
3. The local home economist, University of California Cooperative Extension
4. Industry—Project SMILE (School Meals for Learning and Education), Nancy Thomas, Vice President, Creative Stuff-Public Relations, 5142 Warner Avenue, Suite 201, Huntington Beach, CA 92649, (714) 840-1341
5. Center for Science in the Public Interest, 1757 S. Street N.W., Washington, DC 20009

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**School Lunch Survey Sample**

1. How often do you eat a school-prepared lunch?

   ☐ Never ☐ 1 to 2 times per week ☐ 3 to 4 times per week ☐ Every day

2. How would you rate the quality of the food served in the cafeteria; that is, does it taste good; does it look good?

   ☐ Yuck! ☐ It's okay. ☐ Great!

3. Do you feel that there is enough variety in the foods offered in the cafeteria?

   ☐ Yes ☐ No

   Suggestions for a new food: ______________________________

4. Do you feel that the lunchroom is a pleasant place in which to eat?

   ☐ Yes ☐ No ☐ Sometimes

5. Check the following for suggestions for improving the lunch area:

   ☐ Cafeteria cleanliness patrol ☐ Cheer up the cafeteria manager

   ☐ Colorful murals or paintings ☐ Other: ______________________________

6. Would you be interested in being a member of an advisory council to school food service?

   ☐ Yes ☐ No

   Grade level: ______________ Name: ______________________________

## Appendix D

# National School Lunch Program Background and Philosophy

Feeding children in schools began in the United States in the 1800s as charity programs. The public school system eventually took over these charity programs and expanded them so that they no longer served only the poor children. In the 1930s, school feeding received assistance from the surplus foods distributed by the U.S. Department of Agriculture, but the school feeding program was still operating on a temporary basis.

In 1946 Congress initiated the National School Lunch Program as a measure of national security to safeguard the health and well-being of the nation's children. It is significant that the congressional testimony preceding the passage of the Act, and the Act itself, clearly indicate that its purpose is to make available low cost, nutritious school lunches to all schoolchildren.

In spite of this goal, it became increasingly evident that the National School Lunch Program was not reaching a large number of children. The Act was amended in 1962 to authorize increased reimbursement to schools drawing attendance from particularly needy areas. However, federal funds were not provided for this special assistance program until 1965, and then only in a very limited amount.

In 1966 testimony before several congressional committees indicated that there were many children who qualified for, but were not receiving a free lunch or one at a reduced price. Almost one million of these children were among nine million who were attending schools without food service of any type. This testimony led to the passage of the Child Nutrition Act of 1966. This Act authorized funds for the establishment of breakfast programs in schools drawing attendance from areas in which poor economic conditions exist and for the purchase of equipment needed to initiate or expand school food service. The Act also extends the National School Lunch Program to preschool children. In 1977 Congress further authorized funds for nutrition education to provide instruction for students, teachers, and food service personnel. Thus, the original National School Lunch Program should more properly be called the Child Nutrition Program, since it provides for improved nutrition and, very importantly, nutrition education for our children and youth. It appears that Congress, the general public, and educators are becoming increasingly aware of the fact that "you can't teach a hungry child."[1]

The school food service program is increasing in scope, size, complexity, and importance. Management of the program involves every phase of school business management, nutrition, and merchandising. The person who can successfully operate a school food service program has achieved a high level of skill in many areas.

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[1] James M. Hemphill, Supervisor School Food Service, California State Department of Education

## Appendix E

# Breads from Around the World

Recipes for a few of the breads that are served in countries around the world are as follows:

### Flour Tortillas

Place in mixing bowl:
2 c (227 g) unsifted flour
Sprinkle with:
1 tsp. (4.7 g) salt
Cut in until particles are fine:
¼ c (57 g) lard
Gradually add:
½ c (118 mL) lukewarm water

Toss with a fork to make a stiff dough. Form into a ball and knead thoroughly on a lightly floured board until smooth and flecked with air bubbles. Grease the surface of the dough, cover tightly, and refrigerate up to 24 hours. (This makes the dough easier to handle.) Let dough return to room temperature before rolling.

For large tortillas, divide dough into 8 balls and roll as thin as possible on a lightly floured board, or stretch and pat with floured hands until thin.

For regular size, divide into 11 balls and roll between sheets of waxed paper to 8 inches in diameter, adding flour as needed and trim any ragged edges.

Drop onto a very hot ungreased griddle. Bake until freckled on one side, turn and bake on second side. (Properly cooked, the tortilla remains mostly white, but is flecked with brown and puffed in spots; it has a dry look but still is soft and pliable.)

To serve, fold hot, limp tortilla around pieces of butter.

### Navajo Fry Bread

Combine and sift into a deep bowl:
2 c (227 g) unsifted flour
½ c (42 g) dry milk solids
2 tsp. (7 g) double-acting baking powder
½ tsp. (2.4 g) salt
Add:
2 Tbsp (29 g) lard, cut into ½-inch bits

With fingertips, rub flour mixture and fat together until mixture resembles flakes of course meal. Add ½ c (125 mL) ice water and toss the ingredients together until the dough can be gathered into a ball. Cover bowl with towel and let rest at room temperature about 2 hours. In 2 hours, cut dough in three pieces and roll into rough circles about 8 inches in diameter, ¼ inch thick on lightly floured surface. With small sharp knife, cut two 4 to 5 inch-long parallel slits, 1 inch apart, completely through the dough down the center of each round.

In heavy skillet (10 inch), melt:
1 pound (454 g) lard

Heat until very hot but not smoking. The fat should be about 1 inch deep; add more if necessary. Fry the breads one at a time for about 2 minutes on each side; turn once with tongs. Bread will puff slightly and become crisp and brown. Drain bread on paper towels and serve warm. Makes three 8-inch round breads.

### Indian Chapattis

Mix thoroughly:
2 Tblsp. (30 mL) oil
1½ c (195 g) whole wheat flour
1 tsp. (4.7 g) salt
Add enough to make a soft bread dough:
½ to ¾ c (118 to 177 mL) cold water

Divide into eight balls and roll out thin (about 8 inches in diameter). Bake on a hot skillet or griddle a few minutes on each side. To serve, spread with margarine and eat as is, or fill with rice, beans, or desired filling and roll up to eat.

### Jewish Challah Bread

Dissolve:
1 package active dry yeast in
½ c (118 mL) warm water (110° F. or 43° C).

Set aside.
Melt:
½ c (114 g) butter and mix with
½ c (118 mL) salad oil
1 c (237 mL) scalded milk, cooled to room temperature
Blend in:
¼ c (57 g) sugar
pinch of saffron
yeast mixture
4 eggs
In a large bowl mix:
5 c (568 g) flour
1 tsp. (4.7 g) salt

Make a well in center of flour and pour in egg/yeast mixture. Blend thoroughly, adding more flour if needed. Knead 5 minutes until smooth and elastic. Place dough in greased bowl and turn over to grease top. Cover and let rise in warm place to double in size. Divide dough in seven portions. Roll four strands about 10 inches long and place on a large baking sheet. Pinch top ends together and braid. Cut ends evenly. Roll three more strands about 15 inches long and braid. Place on top of larger braid and center it. Cover lightly and let raise to double in size. Brush with beaten egg yolk mixed with 1 tsp. (5 mL) water.

Sprinkle with:
1 tsp. (2 g) sesame or poppy seed
Bake at 350° F. (175° C) for 1 hour until a deep golden color.

## Irish Soda Bread

Preheat oven to 325° F. (163° C). Grease an 8 by 4 by 2½ inch loaf pan. Mix:
2 c (260 g) whole wheat flour
1 c (114 g) enriched flour
1½ tsp. (7 g) salt
¾ tsp. (3 g) baking soda
Cream:
½ c (125 mL) corn oil
¼ c (43 g) brown sugar
¼ c (60 mL) molasses
Add alternately with dry ingredients
1½ c (355 mL) sour milk or buttermilk
Stir in:
1½ c (227 g) currants
1¼ c (189 g) raisins
Pour batter into loaf pan. Bake about 1 hour and 15 minutes.

## Crumpets

In a large bowl, mix:
1 package active dry yeast
1 tsp. (4.8 g) sugar
¼ c (59 mL) warm water (about 110° F. or 43° C)
Let stand until bubbly, about 15 min. Blend in:
⅓ c (79 mL) scalded milk (at room temperature)
1 egg
1 Tblsp. (14 g) butter or margarine
Add and beat until smooth:
1 c (114 g) flour
½ tsp. (2.3 g) salt

Cover and let stand in a warm place until almost double in size (about 45 min). Brush bottom of a heavy frying pan or griddle and the inside of each ring with melted butter or margarine.

Heat ring in pan over low heat (English cooks use 3½-inch metal crumpet rings. You can use 3-inch flan rings or round open topped cooky cutters, or tuna cans with the top and bottoms removed.) Pour about 3 Tblsp. (45 mL) of batter into each ring. Bake for about 7 minutes or until holes appear and tops are dry. Remove rings and turn crumpets to brown other side lightly, about 2 minutes. Repeat with remaining batter. Serve warm or cool on a rack and toast just before serving. Makes seven or eight crumpets.

## Limpa

Place in pan and bring to boil:
1½ c (355 mL) water
¼ c (43 g) brown sugar
2 tsp. (5 g) caraway seed
2 Tblsp. (28 g) shortening
2 tsp. (9.5 g) salt
Simmer 5 minutes. Pour into a large bowl and add:
1 c (250 mL) water
Place:
1 package active dry yeast, in
½ c (118 mL) warm water (about 110° F. or 43° C)
Stir.
Add and stir into the large bowl of cooling liquid:
2 c (227 g) flour
yeast mixture
Then add:
2 more c (227 g) flour
1½ c (136 g) rye flour
Turn dough onto board sprinkled with
¼ c (23 g) rye flour

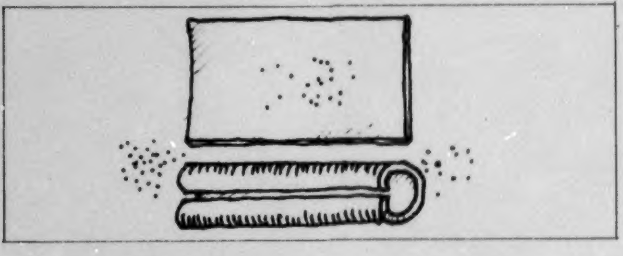
Knead until satiny smooth, using ¼ cup (23 g) more rye flour if dough feels sticky. Place dough in greased bowl. Grease top of dough. Cover and let rise until double in size. Punch down. Divide into two and shape into balls. Place on lightly greased baking sheet, about 4 inches apart. Make 3 cuts, ½ inch deep, across tops of loaves. Cover and let rise until doubled in size. Bake at 350° F. (177° C) for 45 minutes. Cool on rack. For shiny crust brush tops of loaves with milk or eggwhite, and return to oven for 2 minutes. Makes two loaves. Serve Limpa with cheese.

## Pain Ordinaire (French Bread)

Scald:
½ c (118 mL) milk
Add to it:
1 c (237 mL) boiling water
Cool to 85° F. (29° C). Meanwhile, dissolve:
1 cake compressed yeast in:
¼ c (59 mL) water at 85° F. (29° C)
Let yeast rest 10 minutes, then add it to the milk mixture

with:
1½ Tblsp. (22 mL) melted shortening
1 Tblsp. (14 g) sugar
In large mixing bowl mix:
4 c (454 g) sifted flour
2 tsp. (9.5 g) salt
2 tsp. (9.5 g) sugar

Make a hole in center of these ingredients. Pour in liquid mixture. Stir thoroughly, but do not knead. The dough will be soft. Cover with a damp cloth and let rise in warm place about 2 hours. Punch down dough. Place on lightly floured board and pat into two equal oblongs. Fold over one edge to the center, repeat the operation for the second edge and taper the ends lightly. The bottom of the loaf may be pressed on a board which has been dusted with cornmeal and the loaf then placed on a large greased sheet for baking.



Place loaves on greased baking sheet, cut diagonal, ¼-inch deep slits across the tops with sharp pointed scissors. Set in a warm place to rise a little less than double in size. Preheat oven to 400° F. (204° C). On bottom of oven, place a pie tin filled with ½ inch boiling water. Bake bread for 15 minutes, then reduce heat to 350° F. (177° C) and bake 25 minutes longer. Remove bread and brush loaves with mixture of:
1 beaten egg white
1 Tblsp. (15 mL) water
Return to oven and bake 5 minutes more.

### Grissini (Bread Sticks)

Prepare bread dough for pain ordinaire. Roll into an oblong about ¼ inch thick, one dimension of which is about 8 inches. Cut into strips 2 inches wide and 8 inches long. Roll them to form sticks. Place on greased baking sheet and brush with water, milk, or beaten egg. Sprinkle with coarse salt, caraway, sesame, or dill seeds.

Let rise to almost double in size. Bake in preheated 400° F. (204° C) oven for about 15 minutes. Serve sticks warm or cooled.

### Bow (Pork-filled Buns)

Traditionally, bow are steamed and served hot as a snack or for dim sum. But modern Chinese cooks also bake them for the slightly different taste they add to a Chinese meal. Though steamed buns are always served hot, the baked buns are good hot or cold; both types can be made ahead and frozen.

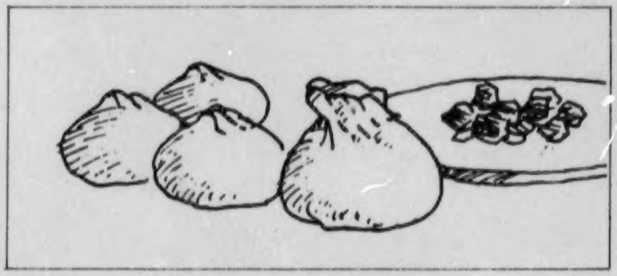
In large bowl dissolve:
1 package active dry yeast
in 1 c (237 mL) warm water (about 110° F. or 43° C)
Blend in:
⅓ c (76 g) sugar
2 Tblsp. (30 mL) oil
1 tsp. (4.7 g) salt
Let stand in warm place until bubbly (about 15 minutes).
Add:
3¼ c (369 g) all purpose flour, unsifted
Mix until dough holds together. Place on lightly floured surface and knead until smooth and elastic (about 10 minutes). Place in greased bowl, cover, and let rise in warm place until double in size (about 1 hour and 15 minutes). Turn dough out onto a lightly floured board and knead for 1 minute. Shape into a rectangle. With a floured knife, cut rectangle in half lengthwise; then cut crosswise six times to make 12 equal pieces.

For plain buns:

Shape dough into 12 round buns. Place on foil square; let rise 30 minutes. Steam buns for 12 to 15 minutes.

For pork filled buns:

Roll each piece into a round about 4½ inches in diameter. Press outside edges of dough to make them slightly thinner than the rest of the round. Place about 2 tablespoons filling in center of each round. Pull edges of dough up around filling and twist to seal as shown below.



For steamed buns:

Place each bun, sealed side down, on a 3-inch square of foil. Cover and let rise in a warm place until puffy and light (about 30 minutes). Set in steamer over boiling water. Cover and steam for 12 to 15 minutes. (When done, tops of buns should be glazed and smooth.) Serve warm; or let cool, wrap, and freeze. (To reheat, steam frozen buns until hot, about 10 minutes.)

For baked buns:
Place buns about 2 inches apart on a greased cookie sheet. Cover and let rise in a warm place until puffy and light (about 30 minutes). Brush tops with melted butter and bake in a 350° F. (180° C) oven until golden brown (about 15 minutes). Makes 12 buns.

Pork Filling: (Prepare while dough is rising.)

Cut into ½ inch cubes:
1½ lbs. (0.68 kg) boneless lean pork
Season with:
2 cloves minced garlic

½ tsp. (1.8 g) fresh grated ginger
2 tsp. (9.5 g) sugar
2 Tblsp. (30 mL) soy sauce
In a bowl combine, and reserve
2 tsp. (9.5 g) sugar
1 Tblsp. (8.9 g) cornstarch
2 Tblsp. (30 mL) soy sauce
1 Tblsp. (15 mL) dry sherry
¼ c (59 mL) water
Stir fry meat in wok or skillet over high heat in small amount of oil until meat is cooked. Reduce heat, add mixture in bowl, and simmer until thick. Set aside.

### Pita Bread

Dissolve 1 envelope active dry yeast in:
1¼ c (296 mL) warm water (110° F. or 43° C)
Stir in:
3 c (341 g) flour
2 tsp. (9.5 g) salt
Stir until a sticky ball is formed. Knead on floured board until smooth. Add flour if necessary. Divide into six balls and kneed until smooth. Roll each ball into a 4 to 5 inch diameter, ¼ inch thick. Cover with a towel and let rise for 45 minutes in warm place until slightly puffed. Place round upside down on baking sheet and bake at 500° F. (260° C) for 17 minutes until browned and puffed in center. Breads will soften and flatten as cooled.

### Portuguese Bread

In a sauce pan combine:
3 c (710 mL) water
1 Tblsp. (14 g) salt
2 Tblsp. (28 g) sugar
⅓ c (79 mL) butter
Bring to boil; then cool. In large bowl sift:
11 c (1.25 g) flour
Dissolve:
2 packages active dry yeast in
⅓ c (79 mL) warm water (110° F. or 43° C)
When dissolved, stir yeast mixture into flour along with:
1 c (237 mL) water
Add cooled mixture and mix well with punching technique until dough stops sticking (about 10 minutes). Rub dough with softened butter; cover and let rest until double in size. Punch down and divide into three parts. Form balls and place in three buttered 9-inch layer cake pans. Cover and let rise until double in size (about 1 hour). Before baking, cut into top of each loaf slightly with knife in the shape of a cross. Bake at 450° F. (232° C) for 15 minutes, then 350° F. (177° C) for 30 to 40 minutes.

### Maandazi (Deep fried bread - East Africa)

In a deep bowl sift together:
2 c (227 g) flour
1 tsp. (3.5 g) baking powder
2 Tblsp. (28 g) sugar
¼ tsp. (1.2 g) salt
In center, make a well and pour in:
1 egg, lightly beaten
¾ c (177 mL) water
Slowly stir mixture together until dough is firm enough to form a soft compact ball. If dough is sticky, add up to ¼ cup (28 g) flour, 1 tablespoon at a time. Cover dough with a damp towel and let dough rest for at least 30 minutes, but no more than 2 hours. Towel must be kept moist.

On a lightly floured surface, roll dough out into a rectangle ½ inch thick. Cut dough into rectangles 2 by 1½ inches. Trim rough edges. Reroll scraps and cut dough into more rectangles.

In deep fat fryer or heavy saucepan, pour in vegetable oil to a depth of 2 to 3 inches. Heat oil to 350° F. (177° C) using a deep fat frying thermometer. Fry the Maandazi rectangles four or five at a time for about 4 minutes, turning occasionally until they are crisp and richly colored on all sides.

Keep Maandazi warm in oven set at lowest setting on baking sheet lined with paper towels. Serve warm.

### Scones

Preheat the oven to 450° F. (230° C).
Sift:
1¾ c (199 g) all purpose flour
2¼ tsp. (7.9 g) baking powder
1 Tblsp. (14 g) sugar
½ tsp. (2.4 g) salt
Using pastry blender or two knives, add and cut in until the size of small peas:
¼ c (5 7 g) butter
In a separate bowl beat in:
2 eggs
Set 2 Tblsp. (30 mL) of this mixture aside and to the remainder beat in:
⅓ c (79 mL) cream
Make a well in dry ingredients and pour the liquid into it. Combine with a few swift strokes. Place dough on lightly floured surface. Pat until ¾ inch thick (handle the dough as little as possible). Cut into diamond shapes and brush with the reserved egg. Sprinkle with salt or sugar.

Bake for 15 minutes. Makes about 12 scones.

### Kulich (traditional Russian Easter loaves)

Dissolve:
2 packages active dry yeast in:
½ c (118 mL) warm water (110° F. or 43° C)
Scald:
¾ c (177 mL) milk
Pour into large bowl and add:
½ c (114 g) sugar
1 tsp. (1.7 g) ground cardamon
2 tsp. (9.5 g) salt
¼ c (57 g) butter or margarine
Cool to lukewarm, then add:
3 c (341 g) all purpose flour, unsifted
Beat until dough pulls away from sides of bowl in stretchy strands. Add dissolved yeast and:
2 eggs slightly beaten
2 tsp. (6 g) grated lemon peel
½ c (76 g) chopped almonds
¼ c (38 g) raisins

¼ c (100 g) chopped and candied citron, orange peel, and cherries

Gradually mix in to make a soft dough:
2 c (227 g) flour

On a lightly floured board knead about 10 minutes, or until smooth and elastic, adding flour if needed. Place dough in a greased bowl and turn it over; cover and let rise in warm place until double in size, about 2 hours.

Generously butter three 1-pound coffee cans. Punch down dough and divide into three equal parts. Shape into ovals and place in buttered cans. Cover tops of cans with greased plastic lids. Let dough rise in warm place until lids pop off, about 1 to 1½ hours.

Bake loaves on lowest rack of oven 35 minutes at 350° F. (180° C). Loaves are done when a thin wooden skewer inserted into centers comes out clean. Let stand 10 minutes; then remove loaves from cans. Let loaves cool on their sides setting on a cloth covered rack.

Before serving, stand upright and drizzle tops with glaze:

Beat until smooth:
1 c (130 g) sifted powdered sugar
5 tsp. (25 mL) milk
Decorate tops with:
Whole almonds
Candied cherries

## Appendix F

# Classroom Food Experiences

Recipes and food experiences should be selected to help teach children to select and eat nutritious foods. Children can prepare nutritious foods that they enjoy eating, such as fruits, vegetables, whole grain products, lean meats, poultry and fish, and low-fat or non-fat milk, and other dairy products.

### Guidelines for Recipe Selection

In cooking experiences, children may be introduced to new foods and be shown how to prepare familiar foods in new ways. Often, children are willing to eat foods in class that they may consistently reject at home. All students are expected to taste the foods presented and to express their feelings about the foods through class discussion or another evaluation technique. Each child receives a copy of the recipe prepared in class to share with his or her family. The back of a recipe provides an ideal place to write information about nutrition and the nutrition project. Since parent involvement is an integral part of the project, the establishment of effective lines of communication between the classroom and the home is critical.

Food activities can be integrated into the total curriculum. Through food experiences children can gain new perspectives in such subjects as the social studies, health, science, language, music, art, and math. Children learn about fractions by cutting potatoes into halves, quarters, and eighths; while cooking, they learn new words, concepts, and skills.

### Suggestions for Implementing Food Experiences

1. Limit the number of children to be involved in each cooking experience to no more than 15; this can be accomplished by working with half of the class at a time. The other half of the class may be in the media center, the library, or involved in another activity. Some of the tasting experiences and simple cooking activities can be modified to involve the whole class, if necessary.
2. Provide a recipe folder for each child to decorate (art activity) and keep at home for his or her recipes. Reminders for safe and sanitary food preparation can be included in the folder.
3. Have each child make a placemat to use in school (art activity). Laminate the placemats for durability.
4. Invite the parents to volunteer their help in cooking. The children's enthusiasm can be helpful in bringing their parents into the school.
5. Request the parents to inform the school about any foods that their children cannot eat because of allergies, intolerances, or religious beliefs.
6. Involve the district food service department in the food experiences. Ask the cafeteria manager to work with you in the classroom. Investigate the use of donated foods in the classroom. Utilizing food services can improve your program.
7. Exhibit measuring utensils. A portable pegboard mounted on an easel can be used to display and store measuring cups, spoons, and other safe utensils that hang. Plan a lesson to familiarize the children with measurement and utensils.
8. Store all cooking equipment on a portable cart so that it can be moved from one classroom to another.
9. Prepare a large recipe chart for each food experience. Read the recipe with the children. Point out methods of food preparation (dice, slice, and blend) and cooking (steam, stir-fry, and bake). Add these words to the students' spelling or vocabulary lists.
10. Discuss at each cooking experience the relationship of food choices to good health.
11. Take advantage of all opportunities to clarify new concepts. For example, explain oven temperature in degrees. Relate this to body temperature and weather temperature and to boiling and freezing points.
12. Maintain a pleasant atmosphere during food tasting experiences. Centerpieces and placemats can be used whenever possible. Students are expected to show courtesy and good table manners, such as talking softly and eating only after all of the children at the table have been served. The children set the table, serve the food,

and clean up. Similar behavior is appropriate in the school dining facility.

13. Ask all students to taste the foods prepared, and discourage them from making negative faces and comments like "yuk" at the table. Rather, ask the children to identify what they like or dislike—texture, color, appearance, or taste. Concentrate on the positive. Explain that it is all right to dislike a food or to prefer it prepared one way more than another. Point out that taste preferences change; thus, tasting foods periodically is a good idea. As the students learn about the nutritional value of foods, they may be influenced to taste new foods.
14. Involve all of the children participating in the food experience. Cooking experiences should be "hands on" activities. Allow the children to do the preparation, cooking, and cleanup whenever possible.
15. Use bulletin boards that relate to the food preparation experiences.
16. Relate field trips to the food experiences. Make a salad with vegetables that the class purchased in a produce market. Cook the fish that was purchased on a field trip. Experiment with foods from an Asian grocery.

**Safety and Sanitation**

1. Keep hot foods hot (over 140° F. or 60° C) and cold foods cold (under 40° F. or 5° C). If you have no refrigerator, a styrofoam ice chest will keep foods hot or cold for short periods of time.
2. Stress clean hands. Explain that germs which cause infection cannot be seen without a microscope. Even hands that look clean should be washed before beginning food related activities. Demonstrate and have students practice proper hand washing techniques. Four steps in proper hand washing are as follows:
   a. Wet the hands thoroughly.
   b. Lather the hands, front and back, with soap.
   c. Rinse the hands with clean water.
   d. Dry the hands with a clean towel.
3. Wash fruits and vegetables thoroughly. Wash the tops of cans before you use them.
4. Always use dry pot-holders when working with hot food and equipment. Keep hot equipment in a safe location in the room. Treat burns *immediately* by holding the burned area under cold water. Report *all* injuries to the school nurse.
5. Be sure that the electric cords are not in the way of traffic.
6. Keep all pot handles turned toward the back of the stove or hot plate.
7. Supervise the children closely when they are using sharp knives. Teach the children to cut away from themselves, always keeping their fingers away from the blade. Heavy plastic knives, wooden ice cream sticks, or tongue depressors can be used for spreading and some slicing.
8. If the dishes are washed by hand, use hot, soapy water; rinse in hot, clean water; and air-dry or paper-towel-dry. Clean all utensils, even can openers.
9. Invite the cafeteria manager to class (or visit the school cafeteria) to tell the students about the safety and sanitation regulations for food service sites. Relate this information to practices in the classroom.
10. Remind the children and volunteers about these rules before each cooking experience.

# Appendix G

# Contact People and Food Service Directors

Eunice Baker, Food Service Director, Escondido Union Elementary School District
Ann Bensen, Teacher, Oxnard Elementary School District
Susan Brooks, Food Service Director, Fremont Unified School District
Alita Buck, Food Service Director, Culver City Unified School District
Keith Burnham, Principal, Del Rey School, Orinda Union School District
John Casad, Food Service Director, Marysville Joint Unified School District
Junius Covington, Food Service Director, Compton Unified School District
Homer Cummins, Principal, Ella School, Marysville Joint Unified School District
Philip Holmes, Principal, John Gomes School, Fremont Unified School District
Virginia House, Principal, Glazier Elementary School, Norwalk-La Mirada Unified School District
Carolyn Jackson, VEA Staff Teacher, Compton Unified School District
Virginia Jones, Food Service Director, Oxnard Elementary School District
Leona Kamen, Food Service Director, Rio Linda Union Elementary School District
Eloise LoForte, Food Service Director, North Sacramento Elementary School District
Robert Maddux, Assistant Superintendent, Woodland Joint Unified School District
Kathy Mauer, Assistant Director of Food Services, Norwalk-La Mirada Unified School District
Marcia McVey, Director of Curriculum and Instruction, Norwalk-La Mirada Unified School District
Mary Miranda, Director, University of California Riverside Children's Center
Kathy Montero, Director, Butte County Children's World, Inc., Chico
Mary Moulton, Food Service Director, Woodland Joint Unified School District
Wilhelmine Nielsen, Director of Curriculum Research and Development, Escondido Union Elementary School District
Elizabeth Randolph, Teacher, Daisy Child Development Center, Compton
Erika Rosemark, Director, Pierce College Child Development Center, Los Angeles
A. H. Shiney, Assistant Superintendent of Instruction, Downey Unified School District
Betty Stahl, Food Service Director, Downey Unified School District
Barbara Valdez, Coordinator of Curriculum, North Sacramento Elementary School District
Susan Walker, Teacher, Rio Linda Union Elementary School District
Pat Williams, Director, Discovery Child Care Center, Davis
Wayne Wong, Food Service Director, Bakersfield City Elementary School District

# Appendix H

# Curriculum Participants

The individuals who helped to develop and/or field test the lessons in this publication are as follows:

| Name | Agency |
|---|---|
| Wanda Anderson | Benicia Unified School District |
| Betty Axup | San Juan Unified School District |
| Elma Beck | Bellflower Unified School District |
| Becky Black | Campbell Union Elementary School District |
| Larry Bobst | ABC Unified School District |
| Irene Brown | San Francisco Head Start |
| Nanci Brown | Bakersfield College |
| Alita Buck | Culver City Unified School District |
| Joan Buckholz | Old Adobe Union Elementary School District |
| Marion Chastain | Riverside Unified School District |
| Kathryn Copeland | Downey Unified School District |
| Jaime Crane-Wong | Oakland Unified School District |
| Angela Croce | San Diego Unified School District |
| Nancy Dalbey | Riverside Unified School District |
| Alicia Dixon | San Juan Unified School District |
| Gail Doe | Placentia Unified School District |
| Debbie Dyer | Bellflower Unified School District |
| Marilyn Felder | Riverside Unified School District |
| Carol Ference | San Juan Unified School District |
| Eileen Fukunaga | Santa Clara Unified School District |
| Lyn Gilliland | San Ramon Valley Unified School District |
| Sue Gutterman | San Jose Unified School District |
| Rebecka Hagerty | University of California, Davis |
| Cindy Henderson | San Ramon Valley Unified School District |
| Caroline Hickson | Newcastle School for Exceptional Children |
| Janice Huber | Rowland Unified School District |
| Elizabeth Guho-Johnson | Rowland Unified School District |
| Jody Johnson | Office of the Humboldt County Superintendent of Schools |
| Vicky Katayama | Food Law Center, California Rural Assistance League |
| Sue Kidd | San Ramon Valley Unified School District |
| Mary Jane Kiefer | San Juan Unified School District |
| Nancy Koellein | Paramount Unified School District |
| Virginia Lindsteadt | Office of the Mendocino County Superintendent of Schools |
| Patti Mahony | Culver City Unified School District |
| Sally McGhee | Loma Vista Children's Center |
| Schoen McGinnity | San Jose Unified School District |
| Bea Allegrotti Millslagle | Contra Costa Department of Health |
| Edna Morgan | Sacramento City Unified School District |

| | |
|---|---|
| Maria Mujica | Office of Child Development, California State Department of Education |
| Carole Napolitano | Milpitas Unified School District |
| Sharon Nitta | Hill Head Start |
| Grace O'Leary | Milpitas Unified School District |
| Nancy Parker | Contra Costa County Department of Health |
| Roxanna Phillips | Loma Vista Children's Center |
| Raleigh Philp | Rowland Unified School District |
| Judy Plunkett | Chula Vista City Elementary School District |
| Janet Raulin | Chula Vista City Elementary School District |
| Marcia Riehl | Berkeley Head Start |
| Brian Rupenthal | Old Adobe Union Elementary School District |
| Charlene Scofield | Lamont Elementary School District |
| Wendy Shigenaga | Metropolitan Area Advisory Commission, National City |
| Lorraine Smith | Vallejo City Unified School District |
| Evagene Stafford | Benicia Unified School District |
| Susan Strahs | Newport-Mesa Unified School District |
| Carvill Veech | San Mateo City Elementary School District |
| Joyce Vermeersch | Nutrition and Evaluation Consultant |
| Donna Warner | Santee Elementary School District |
| Sue White | Cory Children's Center |
| Frances Williams | Lamont Elementary School District |
| Cheerfield Wong | Chinatown Community Children's Center, San Francisco |
| Theresa Wong | Chinatown Community Children's Center, San Francisco |
| Ann Wright | Culver City Unified School District |

The individuals who helped to pilot-test the lessons in this publication are as follows:

| | |
|---|---|
| Phylis Adams | Orinda Union Elementary School District |
| Gloria Ampolilla | Norwalk-La Mirada Unified School District |
| Lois Bagnerise | Compton Unified School District |
| Janine Bailey | Norwalk-La Mirada Unified School District |
| Kay Ball | Bakersfield City Elementary School District |
| Linda Banfiel | Fremont Unified School District |
| Sue Barringer | Escondido Union Elementary School District |
| Bob Beaman | Fremont Unified School District |
| Peggy Bixler | Child Development Center, Los Angeles Pierce College |
| Patti Boyd | Marysville Joint Unified School District |
| Betty Brenda | Woodland Joint Unified School District |
| Betty Broo | Marysville Joint Unified School District |
| Elizabeth Burch | Orinda Union Elementary School District |
| Joan Castor | Oxnard Elementary School District |
| Linda Chalk | Rio Linda Union Elementary School District |
| Kathy Cobb | Woodland Joint Unified School District |
| Diane Cohn | Child Development Center, Los Angeles Pierce College |
| Judy Cooper | Fremont Unified School District |
| Judy Crabtree | Escondido Union School District |
| Virginia Darcey | Downey Unified School District |
| Jean Davis | Compton Unified School District |
| June Davis | Daisy Child Development Center, Compton |
| Maryann Davis | Downey Unified School District |
| Barbara Denk | Norwalk-La Mirada Unified School District |
| Janet Deuel | Bakersfield City Elementary School District |
| Diana Deutsch | Child Development Center, Los Angeles Pierce College |
| Mary Drawbond | Downey Unified School District |
| Ana Dreifus | Norwalk-La Mirada Unified School District |
| Bonnie Duddleston | Downey Unified School District |
| Al Evanovich | Bakersfield City Elementary School District |
| Marian Franco | Oxnard Elementary School District |
| Kathy Fujikawa | Escondido Union Elementary School District |
| Pansy Gee | Bakersfield City Elementary School District |
| Yolanda Green | Daisy Child Development Center, Compton |
| Ann Hall | Downey Unified School District |

| | |
|---|---|
| **Bonnie Jean Harrion** | Orinda Union Elementary School District |
| **Judy Hicks** | Marysville Joint Unified School District |
| **Nancy Hoffman** | Butte County Children's World, Inc., Chico |
| **Joanne Howard** | Orinda Union Elementary School District |
| **Ruth Hughey** | Downey Unified School District |
| **Joan James** | North Sacramento Elementary School District |
| **Carmen Jarel** | Culver City Unified School District |
| **Wilma Jeffries** | Compton Unified School District |
| **Jack Josephson** | Norwalk-La Mirada Unified School District |
| **Vicki Kaswen** | Fremont Unified School District |
| **Gale Kelly** | Woodland Joint Unified School District |
| **Nancy S. Kelly** | Culver City Unified School District |
| **Regina King** | Daisy Child Development Center, Compton |
| **Lila Kreutz** | Norwalk-La Mirada Unified School District |
| **Marjorie Lake** | Downey Unified School District |
| **Kathy Lally** | Child Developoment Center, Los Angeles Pierce College |
| **Eva Leckman** | Oxnard Elementary School District |
| **Ed Lewis** | Norwalk-La Mirada Unified School District |
| **Wanda Lewis** | Downey Unified School District |
| **Karen Long** | Marysville Joint Unified School District |
| **Jean Maddox** | Downey Unified School District |
| **Patti Mahony** | Culver City Unified School District |
| **Bonnie Malloy** | Butte County Children's World, Inc., Chico |
| **Joyce March** | Orinda Union Elementary School District |
| **Carol McLean** | Woodland Joint Unified School District |
| **Robyn Metchik** | Oxnard Elementary School District |
| **Carolyn Miller** | Downey Unified School District |
| **Sheri Mochizuki** | Culver City Unified School District |
| **Mary Moore** | North Sacramento Elementary School District |
| **Maggie Morgan** | Compton Unified School District |
| **Erma Neal** | Woodland Joint Unified School District |
| **Susan Newell** | Escondido Union Elementary School District |
| **Eleanor O'Keefe** | Bakersfield City Elementary School District |
| **Lynn Pearce** | Rio Linda Union Elementary School District |
| **Kathy Pitts** | Norwalk-La Mirada Unified School District |
| **Ginny Plotke** | Culver City Unified School District |
| **Julie Putnik** | North Sacramento Elementary School District |
| **Gloria Reed** | Compton Unified School District |
| **Linda Reimel** | Oxnard Elementary School District |
| **Patricia Resch** | North Sacramento Elementary School District |
| **Ted Richter** | North Sacramento Elementary School District |
| **Marsha Rosenthal** | Orinda Union Elementary School District |
| **Helen Ryan** | University of California, Riverside Children's Center |
| **Ward Schroeder** | Marysville Joint Unified School District |
| **Connie Singh** | Oxnard Elementary School District |
| **Peggy Skinner** | Rio Linda Union Elementary School District |
| **Marcia Smith** | Fremont Unified School District |
| **John Soelter** | Downey Unified School District |
| **Lorraine Spain** | North Sacramento Elementary School District |
| **Terry Speir** | Culver City Unified School District |
| **Mary Stallings** | Compton Unified School District |
| **Connie Staples** | Marysville Joint Unified School District |
| **Elsie St. Pierre** | Rio Linda Union Elementary School District |
| **Gladys Tate** | North Sacramento Elementary School District |
| **Irene Thompson** | Compton Unified School District |
| **Sally Tomlinson** | Orinda Union Elementary School District |
| **Pat Trout** | Bakersfield City Elementary School District |
| **Margaret Vaughan** | Downey Unified School District |
| **Gil Walker** | Woodland Joint Unified School District |
| **Antionette Walton** | Daisy Child Development Center, Compton |
| **Kathy Whicker** | Bakersfield City Elementary School District |
| **Pat Williams** | Discovery Child Care Center, Davis |

| | |
|---|---|
| Dale Wilson | Fremont Unified School District |
| Karen Wischnack | Fremont Unified School District |
| Gwendolyn Wong | Oxnard Elementary School District |
| Ann Wright | Culver City Unified School District |
| Val Wristen | Rio Linda Union Elementary School District |
| Kathy Wymore | Rio Linda Union Elementary School District |
| Shirley Zaugg | Escondido Union Elementary School District |
| Ethel Zelambo | Downey Unified School District |
| Joyce Zelenz | Escondido Union Elementary School District |
| Grace Zuber | Woodland Joint Unified School District |

## Appendix I

# Student Materials

The following illustrations, handouts, work sheets, and game boards have been referenced in lessons in chapters two, three, and four. Pages may be removed from the guide and used as duplication masters or laminated to tagboard as a game original or poster. Refer to the specific lesson procedures for details in use of the student materials.

Name ______________________

# Selecting a Restaurant

| Restaurant 1 | Restaurant 2 | Restaurant 3 |
|---|---|---|
| 1. The menu includes three levels of hamburgers, two kinds of hot dogs, and three kinds of drinks. | 1. The menu includes 14 kinds of sandwiches, fries, rings, potato salad, and pizza, and it includes five kinds of drinks and ice cream. | 1. The menu includes ten kinds of sandwiches; five different dinners, including pizza, spaghetti, and fish; and four kinds of drinks and desserts, including ice cream, pies, and puddings. |
| 2. Foods are ordered and picked up at the counter. The restaurant also has a drive-up window. | 2. Food is ordered at the counter but delivered to the table. | 2. Food is ordered at the table and served to you. |
| 3. Mostly teenagers patronize this restaurant. | 3. Most of those who eat at this restaurant are teenagers and families. | 3. Most of those who eat at this restaurant are families. |
| 4. Popular background music is played. | 4. Disco background music is played. | 4. Popular background music is played. |
| 5. Pinball machines are available. | 5. A free cupcake and candles are provided to birthday people. | 5. Free ice cream is provided for birthday parties. |
| 6. Paper napkins are provided. | 6. Paper napkins are provided. | 6. Cloth napkins are provided. |
| 7. Plastic spoons, knives, and forks are used. | 7. Metal spoons, knives, and forks are used. | 7. Metal spoons, knives, and forks are used. |
| 8. The average cost of a meal is $1.50. | 8. The average cost of a meal is $3.00. | 8. The average cost of a meal is $4.95. |
| 9. Furniture consists of wooden picnic tables and benches. | 9. Furniture consists of plastic chairs and tables. | 9. Furniture consists of booths, upholstered chairs, and tables. |

Value statement:

One of my values in selecting a restaurant for a party is ______________________

______________________________________________.

Name ______________________

# Nutrients: What They Do and Where They Are Found

| | Nutrient | Function | Food sources |
|---|---|---|---|
| **Cats** | | | |
| **Wait** | | | |
| **For** | | | |
| **Mice** | | | |
| **Very** | | | |
| **Patiently** | | | |

Name ____________________

# The Nutrient Groups

The body needs certain substances to live. These substances are known as nutrients. The six major nutrient groups are *protein, carbohydrate, fat, vitamins, minerals,* and *water.*

All animals and some plants contain fat. Meats and some milk products are animal foods that contain fat. Oils such as corn oil, olive oil, and peanut oil are from plants.

Two types of carbohydrates are sugar and starch. Both types of carbohydrate provide energy and can be found in plant foods like potatoes (starch) and apples (sugar).

Of the many types of vitamins, vitamins A and C are most likely to be lacking in diets.

Some of the minerals are iron and calcium. These nutrients can be obtained by eating foods every day from each of the Basic Four food groups.

A. Vocabulary

1. n_tr__nts
2. pr_t__n
3. c_rb_hydr_t_s
4. f_t
5. v_t_m_ns
6. m_n_r_ls
7. w_t_r
8. _r_n
9. c_lc__m
10. s_g_r
11. st_rch

B. Alphabetize the vocabulary words.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________

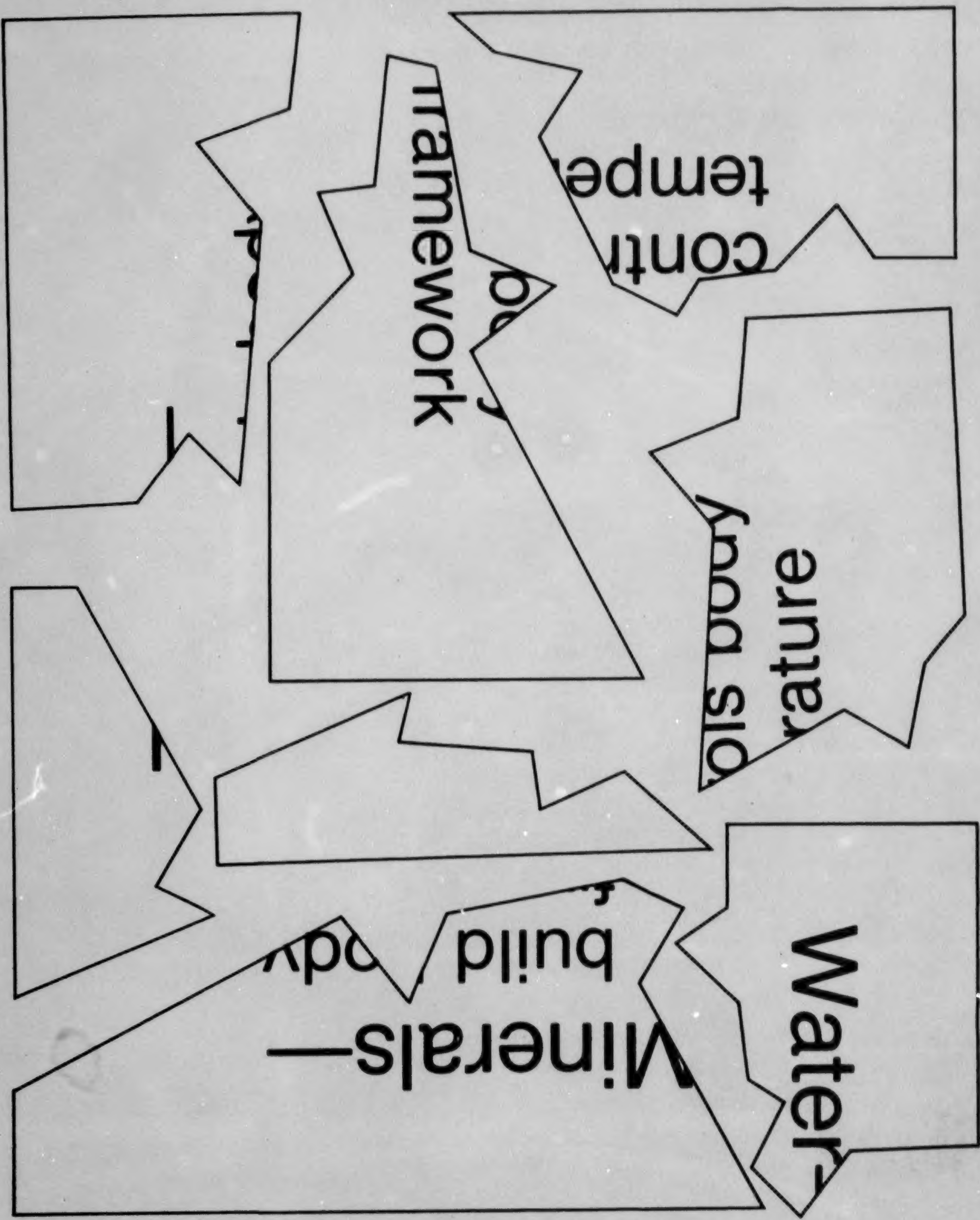
C. Divide the following three words into syllables:

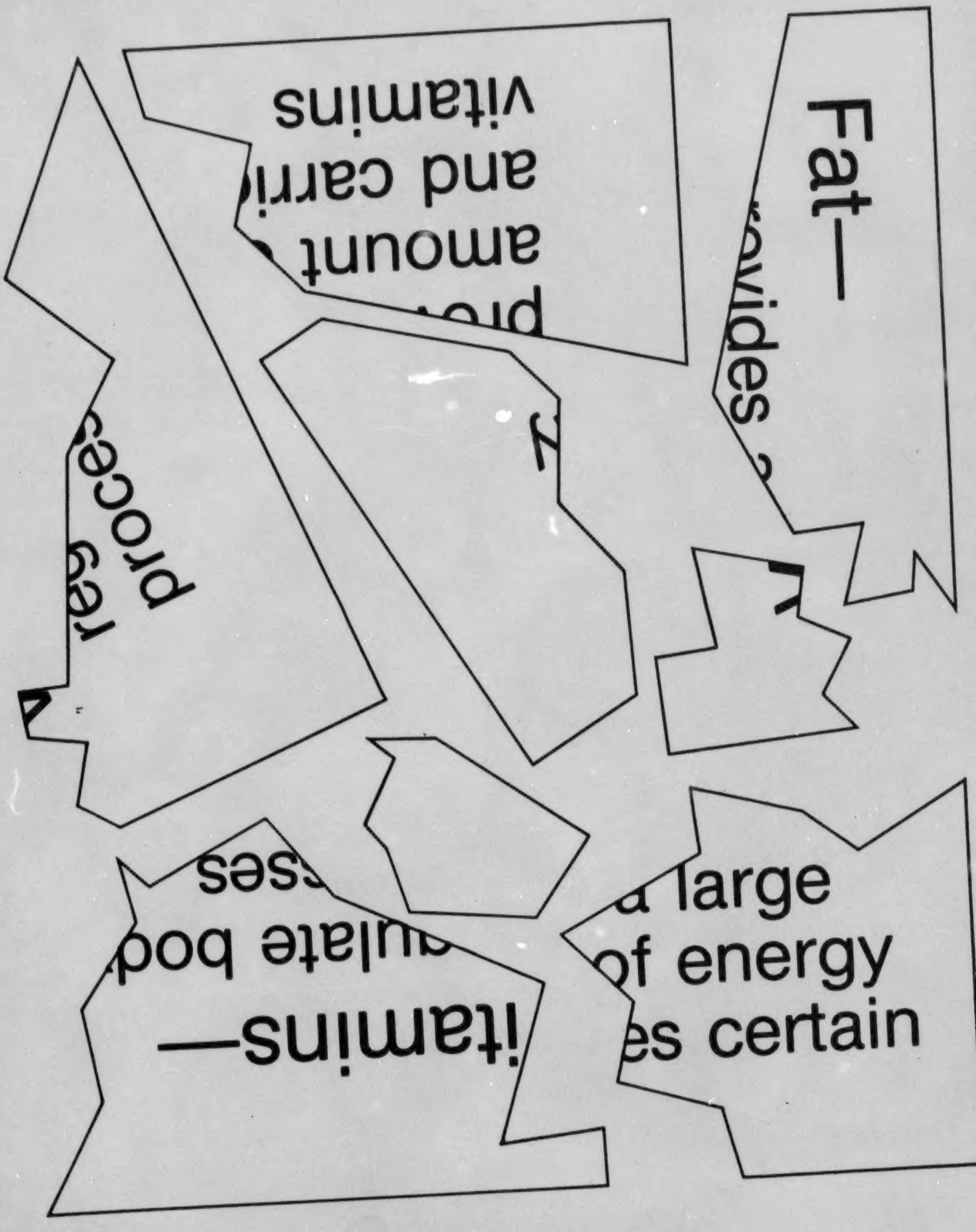
1. carbohydrate
2. nutrient
3. protein

D. Comprehensive check

1. The body needs ______________________________ to live.
2. ________________, ________________, ________________, ________________,
________________, and ________________ are the six nutrient groups.
3. Vitamins most likely to be lacking in[illegible]ts are ____________________
and ____________________.
4. Fat comes from both ____________________ and ____________________.

## Nutrient Puzzles


Water—
controls body
temperature
Minerals—
build body
framework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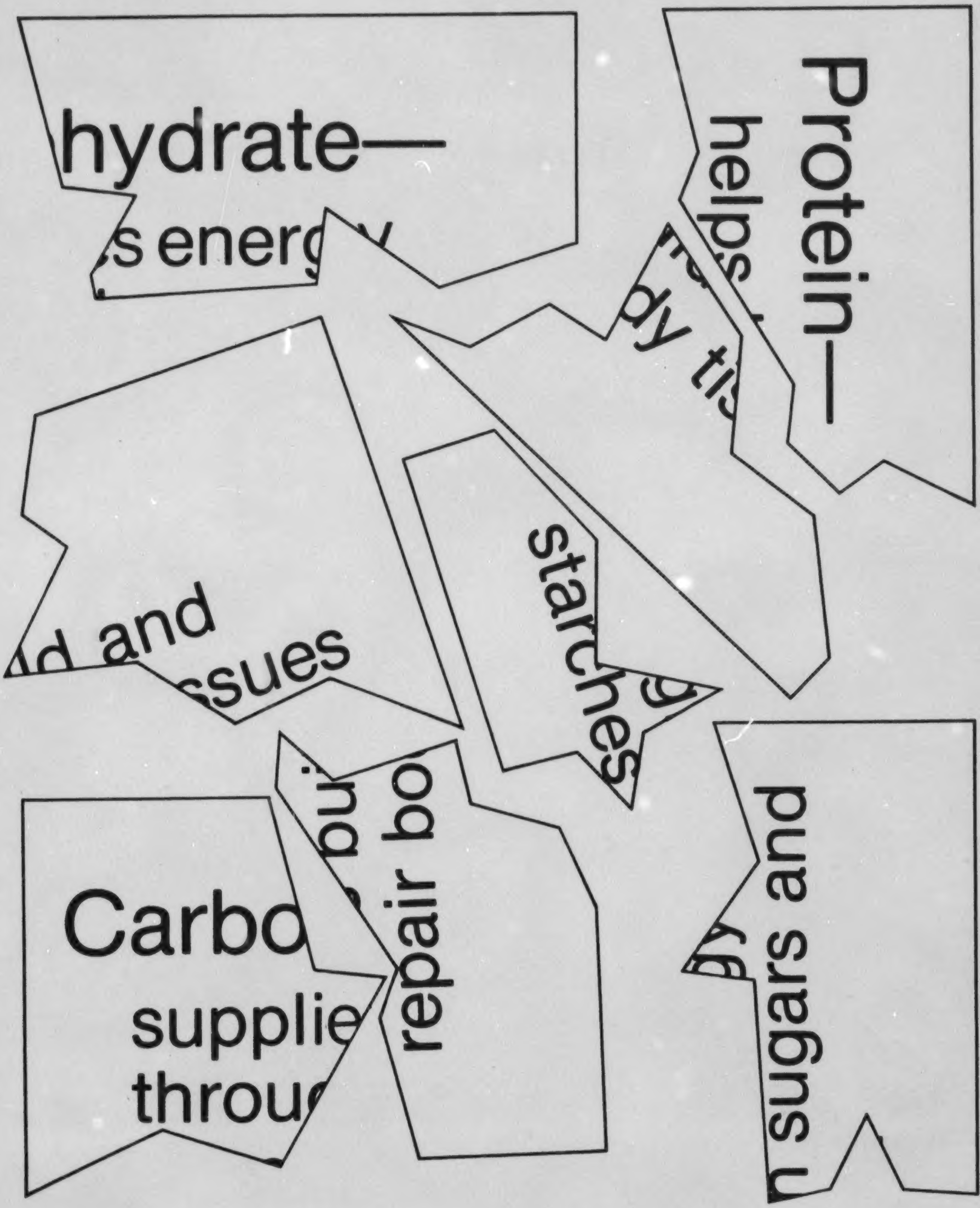
hydrate—
s energy
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gy

Name ______________

# Oh, What They Do for Me!

The body needs six major nutrient grou to be healthy.

Fill in the name of each major nutrient grou and match it with the appropriate functio

Carbohydrates
Fat

E
N
E
R
G
Y

2. F _ _

1. C _ _ _ _ _ _ _ _ _ _ _ _

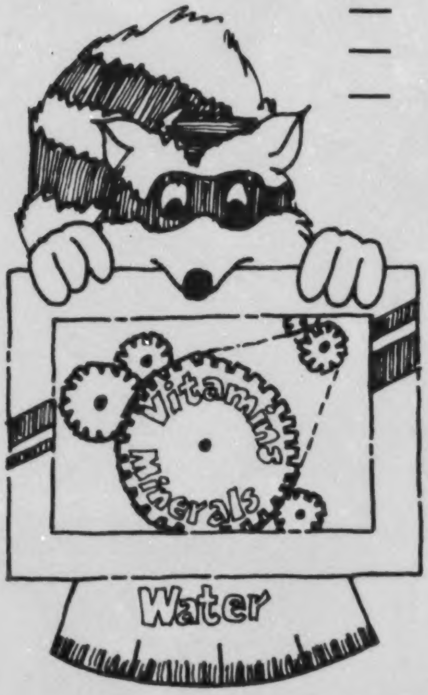
M _ _ _ _ _ _ _

3. BUILDS BODY FRAMEWORK

4. P _ _ _ _ _ _

B
U
I
L
D
S

M
U
S
C
L
E


Vitamins
Minerals
Water

5. V _ T _ _ _ S

REGULATES BODY PROCESSES

6. W _ _ E _

CONTROLS BODY TEMPERATURE

Name________________________

# Guess The Real Mr. Nutrient Game

Cut out the nutrient descriptions, glue them to 3- by 5-inch cards, and number.

Game Instructions:

Decide in advance which of the six nutrient groups will be "The Real Mr. Nutrient." Print the numbers 1 through 6 on index cards. Ask for six student volunteers to read the cards. Pin a number on each student. After reading his or her card, each student says, "I am the real Mr. Protein" (or whichever nutrient selected). The remaining students record on paper the number of the reader they think is "The Real Mr. Protein." Record the votes on the chalkboard. Reveal the correct nutrient, and then review with the class the other nutrients represented. Repeat the game at another time featuring another nutrient.

**(Protein)**

I am a builder. I help your body grow. I build strong muscles. I repair your parts when they are hurt. I am found in meat, fish, poultry, eggs, legumes, and dairy products.

**(Water)**

I help control your body temperature. I help transport nutrients throughout your body. More than half of your body is me. I am found in almost every food.

**(Fat)**

I have more energy in me than any nutrient. I am stored in your body. I carry certain vitamins. I keep you warm when it is cold. I am found in butter, lard, nuts, and avocados.

**(Carbohydrate)**

I am full of energy. Sugars and starches are forms of me. You need me for energy so you can work and play each day. I am found in grains, legumes, fruits, vegetables, and milk.

**(Vitamins)**

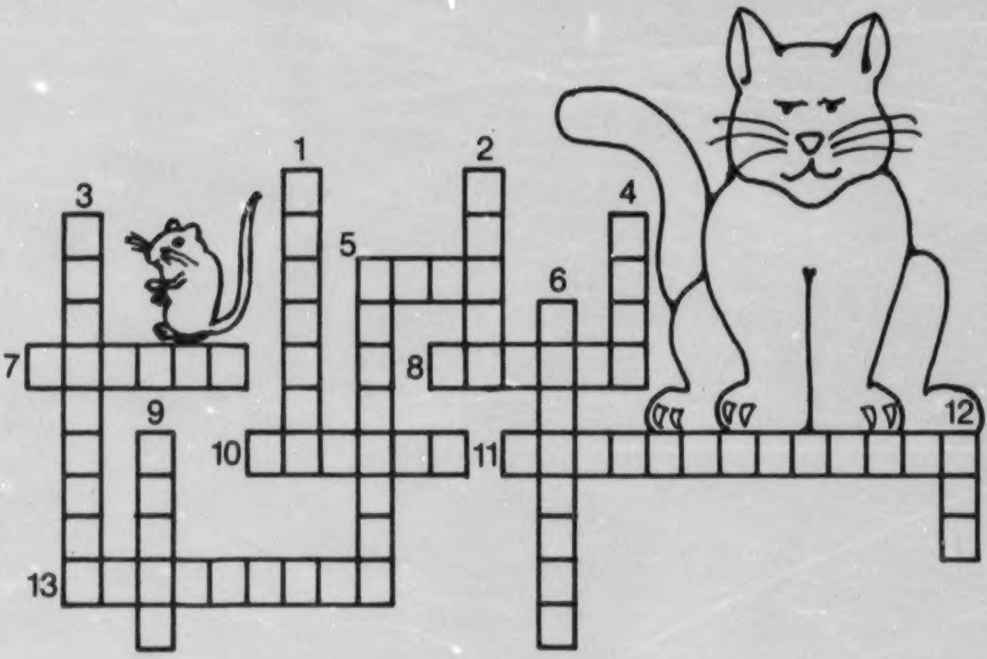
I am a body regulator. I make sure all works well in your body. You need me for clear skin, good appetite, and digestion. I help you grow and be healthy and help fight infection. I am found in most foods.

**(Minerals)**

I am a body regulator. I am also needed to build parts of your body, such as bones and teeth. I help make your nerves and muscles work right. I am found in most foods.

Name ____________________

# Nutrient Group Crossword Puzzle



CLUES
carbohydrates
digestion
energy
fats
health
grains
minerals
most
nutrients
protein
six
teeth
vitamins
water

**Down:**

1. This nutrient group is important for tissue building and repair.
2. This nutrient transports nutrients.
3. Water aids the body in ____________________.
4. This nutrient is stored in the body and carries some vitamins.
5. Nutrients which help regulate and maintain body functions are ________________.
6. Fruits and vegetables provide ____________________ and minerals.
9. Minerals are needed to build healthy blood, bones, and ____________________.
12. There are __________ nutrient groups.

**Across:**

5. Vitamins and minerals are found in ____________________ foods.
7. A variety of foods are needed for good ____________________.
8. Carbohydrates are found in starchy roots and tubers, dried peas, beans, and ____________________.
10. Fats and carbohydrates provide ____________________.
11. One nutrient that provides energy is ____________________.
13. Fats, water, vitamins, minerals, protein, and carboydrates are all ____________.

Name ______________________

# Nutrient Scramble

A. Unscramble each set of letters to spell one of the six nutrient groups.

1. A B O R H R T C D A E S Y ______________________
2. N R T E P O I ______________________
3. A F T ______________________
4. T E W R A ______________________
5. T I A S I N V M ______________________
6. I N A M E R L S ______________________

B. Place a word from Section A in the appropriate blank below.

1. Provides energy ______________________
2. Regulates body temperature ______________________
3. Builds and repairs body tissue ______________________
4. Regulates nerve and muscle processes ______________________
5. Regulates digestion and appetite ______________________
6. Stores energy ______________________

Name ______________________

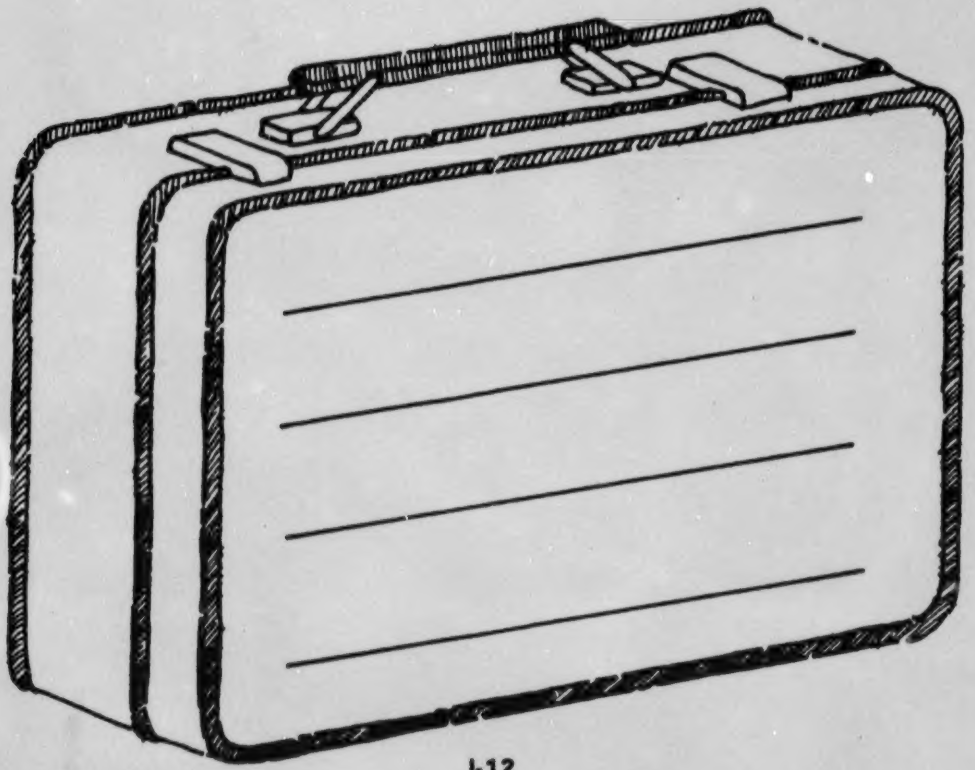
# Pack Your Own Lunch

1. Pick the food you want to put in your lunch box.
2. Circle any four items you want.
3. Write at the bottom of this page the names of the foods you would pack in the lunch box.

apple
banana
cake
ham sandwich
orange
candy bar
milk
orange juice
peach
cookies

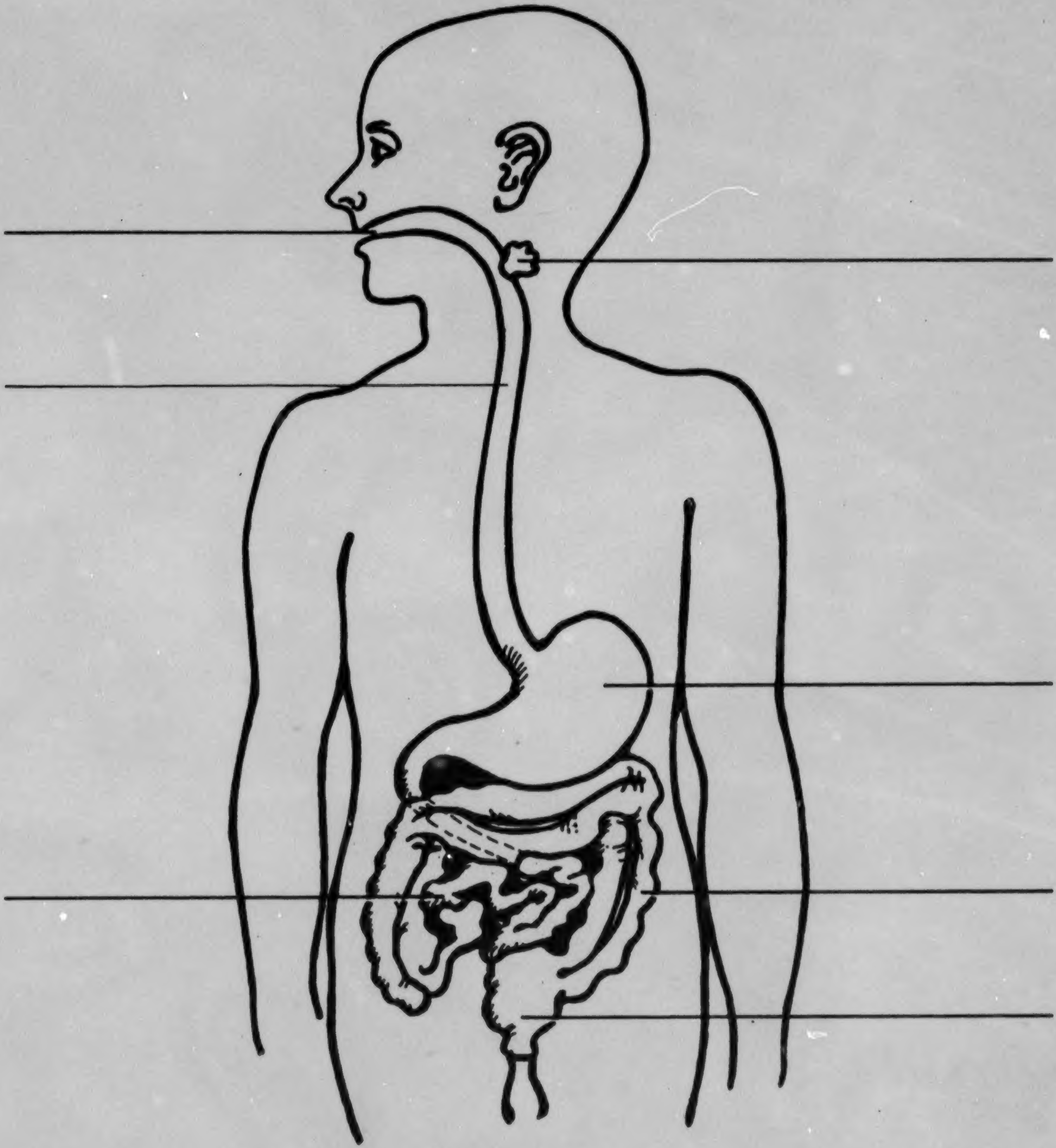
potato chips
carrots
peanuts
bologna sandwich
hard-cooked egg
salad
fried chicken
apricot
celery
cheese sandwich

yogurt
plum
tuna sandwich
pickle
crackers
soup
cheese
chocolate milk
can of soda pop
peanut butter and jelly sandwich



Name______________________________

# Transparent Self



# The Food Tube Game

Q. What is the process called that changes food into food for cells?
A. (Digestion )

Move 2

Q. Where does food absorption occur?
A. (Small intestine)

Move 2

Q. Where does the digestion or breakdown of food begin?
A. (In the mouth where it is chewed)

Move 1

Q. What role does the esophagus play in food digestion?
A. (Path to the stomach for all food)

Move 2

Q. What does chewing do to food?
A. (Breaks food down into smaller pieces)

Move 1

Q. In the digestive system, where does food go after it leaves the stomach?
A. (Small intestine)

Move 2

Q. What does the large intestine do?
A. (The large intestine concentrates what has not been absorbed by the body and compacts it so it can be eliminated by the body.)

Move 3

Q. Name the five senses that help a person enjoy food.
A. (Sight, hearing, taste, touch, and smell)

Move 3

Q. During digestion, solid foods are broken down into ________________ to be absorbed.
A. (Liquids or Molecules)

Move 1

Q. Name two high fiber foods for healthy digestion.
A. (Whole wheat bread, whole grains, fresh fruits and vegetables)

Move 1

Q. Food is carried by the blood stream to the ____________________.
A. (Cells)

Move 1

Q. Name two things food does for the body.
A. (Energy, body building, regulation, and good health)

Move 2

Q. How long does digestion take?
A. (From 3 to 20 hours.)

Move 1

Q. What is the name of the juices that break down food in the stomach?
A. (Gastric juices)

Move 1

Q. Name the four food groups that should be included in every meal for a healthy diet.
A. (Meat, fish, poultry, and beans group; milk and cheese group; bread and cereal group; and vegetable and fruit group)

Move 1

Q. Name two ways to help the stomach relax and do its job well.
A. (1) Eat in a quiet, pleasant eating environment; (2) chew food well; (3) enjoy mealtimes; and (4) relax and take your time.

Move 1

Q. How is food carried to the cells after it leaves the small intestine?
A. (By the blood stream)

Move 1

Q. When a person smells an apple pie and his or her mouth begins to water, what is this water called?
A. (Saliva)

Move 1

Q. Where does food go after it is swallowed?
A. (Down the esophagus and into the stomach)

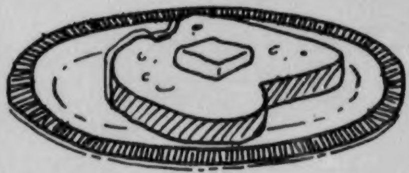
Move 1

Q. What are you likely to get when you do not chew your food and your stomach has to work extra hard?
A. (Stomachache)

Move 1

Stomach

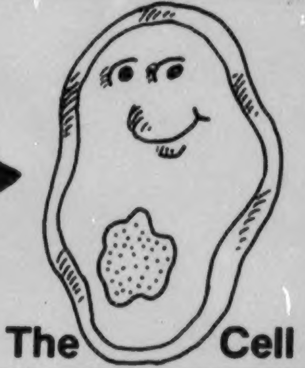
Esophagus



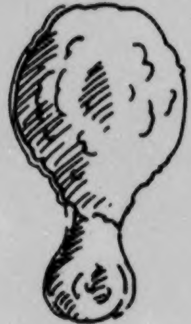
Large intestine

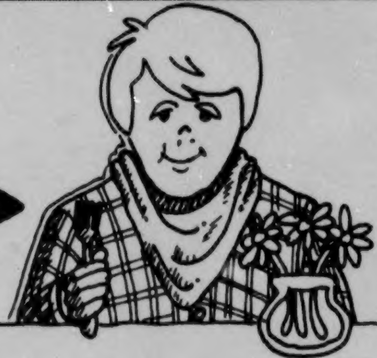
**Go** ahead **one**.
You chewed well.

**Finish**

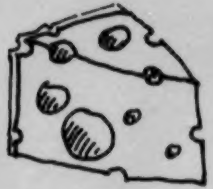


Salivary gland

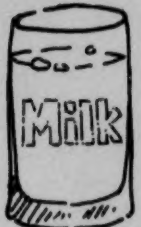




Small intestine

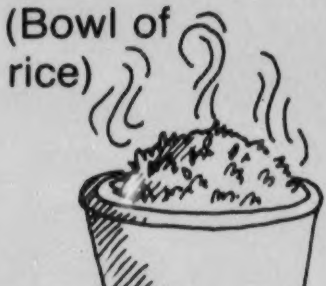


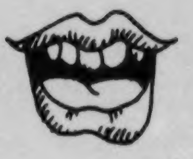
**Go** back **one**. You have a stomachache.



# THE FOOD TUBE

**CARDS**


(Bowl of rice)

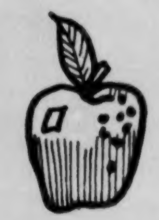


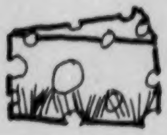
**START**

Name ____________________

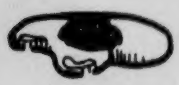
# Which Has More Fiber?

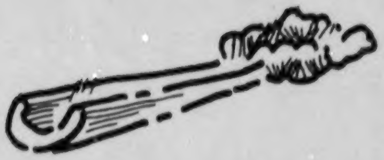
Directions: Circle the food in each pair that has the most fiber.



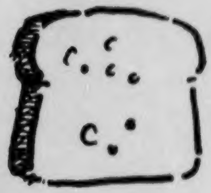


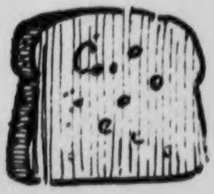
1. Apple or Cheese



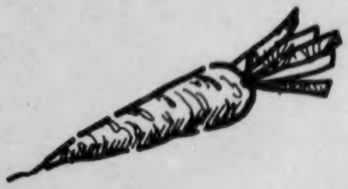


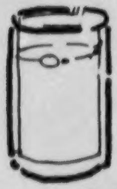
2. Egg or Celery



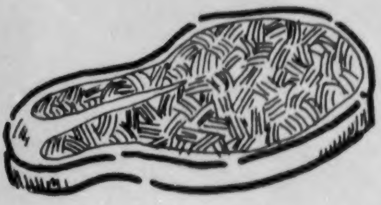


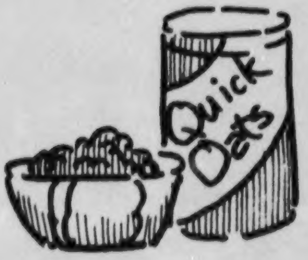
3. White Bread or Whole Wheat Bread



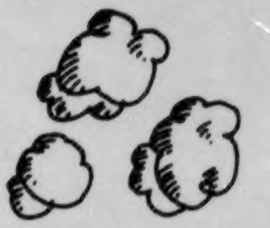


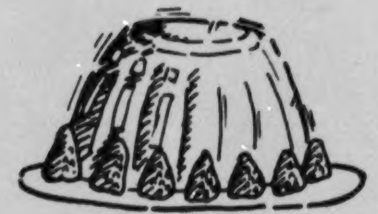
4. Carrot or Glass of Milk



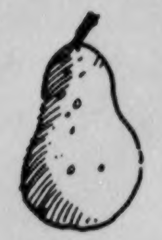


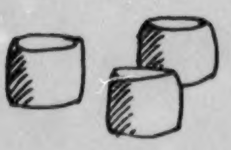
5. Steak or Oatmeal



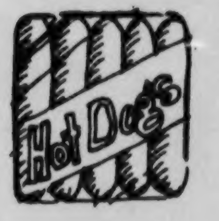


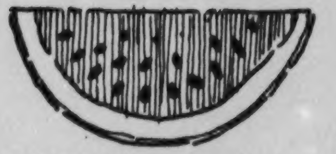
6. Popcorn or Gelatin Dessert



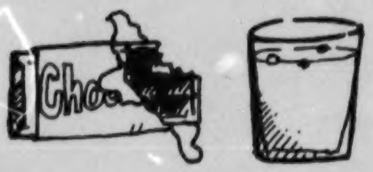


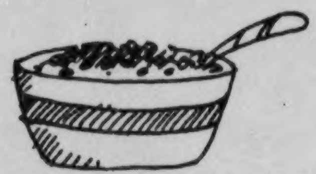
7. Pear or Marshmallows



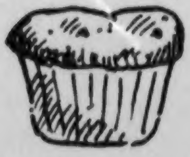


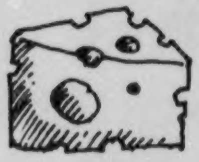
8. Hot Dog or Watermelon





9. Chocolate Candy Bar and Glass of Milk or Granola Cereal and Milk





10. Bran Muffin or Cheese

Name ______________________

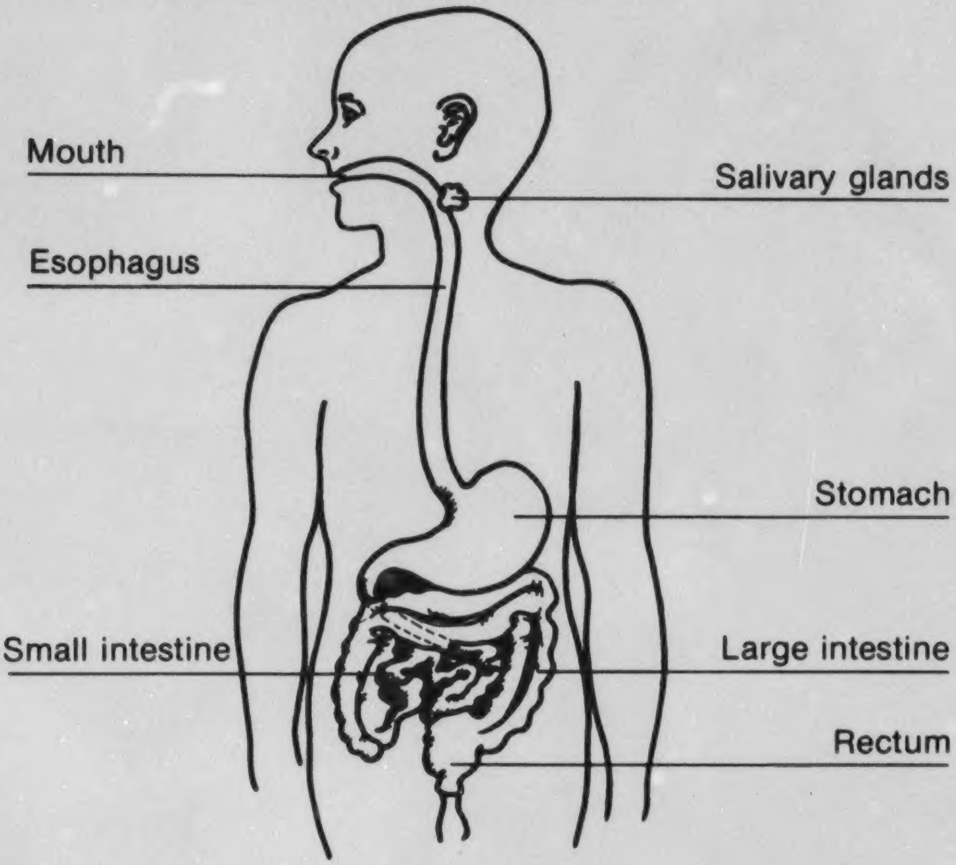
# Digestion Match

Directions: Match digestion part with function.

| | |
|---|---|
| Mouth | Moves food from the mouth to the stomach |
| Esophagus | Chews food and mixes with saliva |
| Stomach | Collects waste or "leftovers" |
| Small intestine | Mixes food and controls amount that goes into intestine |
| Large intestine | Passes small food particles into bloodstream |
| Rectum | Passes waste out of body |

Name ____________________

# Digestive System

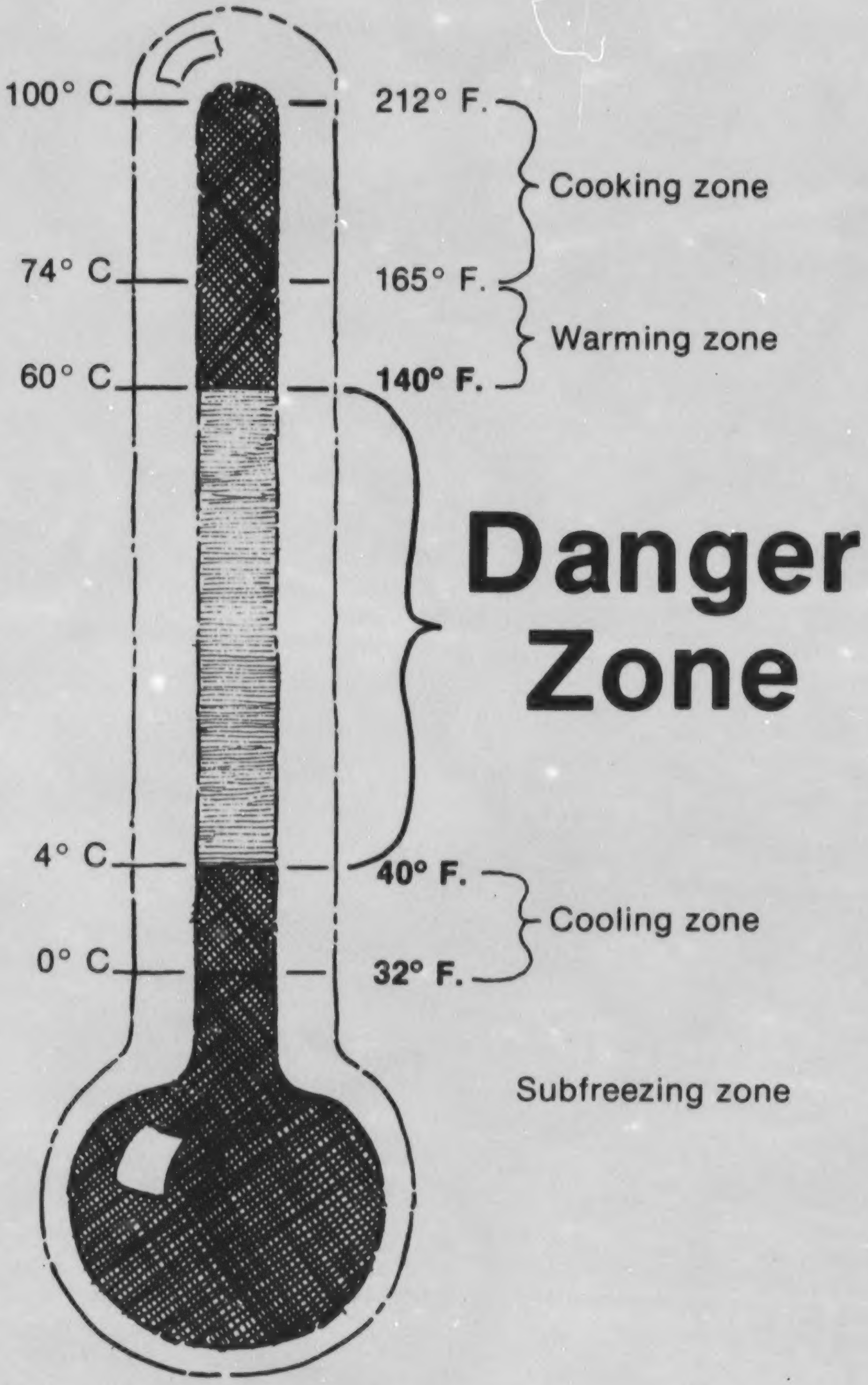

Mouth
Salivary glands
Esophagus
Stomach
Small intestine
Large intestine
Rectum

List the functions of each of the parts of the body listed above in the process of digestion.

1. Mouth ____________________
2. Salivary glands ____________________
3. Esophagus ____________________
4. Stomach ____________________
5. Small intestine ____________________
6. Large intestine ____________________
7. Rectum ____________________

Name ______________________

# Thermometer Chart


100° C
212° F.
Cooking zone
74° C
165° F.
Warming zone
60° C
140° F.
Danger Zone
4° C
40° F.
Cooling zone
0° C
32° F.
Subfreezing zone

Name ____________________

# Food Experiment Data Record

| | | Condition of food | | | | |
|---|---|---|---|---|---|---|
| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
| **Cheese**<br>Shelf, uncovered | odor<br>color<br>texture | | | | | |
| Shelf, covered | odor<br>color<br>texture | | | | | |
| Refrigerator, uncovered | odor<br>color<br>texture | | | | | |
| Refrigerator, covered | odor<br>color<br>texture | | | | | |
| **Milk**<br>Room temperature | odor<br>color<br>texture | | | | | |
| Refrigerator | odor<br>color<br>texture | | | | | |

Name ______________________

# Food Experiment Data Record

|  |  | Condition of food |  |  |  |  |
|---|---|---|---|---|---|---|
|  |  | **Day 1** | **Day 2** | **Day 3** | **Day 4** | **Day 5** |
| **Egg**<br>Room temperature | odor<br>color<br>texture |  |  |  |  |  |
| Refrigerator | odor<br>color<br>texture |  |  |  |  |  |
| **Carrot**<br>Whole, unwrapped, room temperature | odor<br>color<br>texture |  |  |  |  |  |
| Whole, unwrapped, refrigerator | odor<br>color<br>texture |  |  |  |  |  |
| Whole, wrapped, room temperature | odor<br>color<br>texture |  |  |  |  |  |
| Whole, wrapped, refrigerator | odor<br>color<br>texture |  |  |  |  |  |

Name ____________________

# Food-borne Illness

1. George and Jennie are going on a picnic. The foods included in the lunch are listed below. Circle those food items that must be refrigerated.

   yogurt dip
   raw vegetables
   ham sandwiches
   chips
   macaroni salad
   orange juice
   hot baked beans

2. Henry and Julie have just finished a clay modeling project at their desks. It is now time to have a tasting experience with calcium-rich foods. List two things Henry and Julie should do to get ready for the tasting experience:

   ____________________

   ____________________

3. List two ways a person can prevent food-borne illness.

   ____________________

   ____________________

Name ____________________

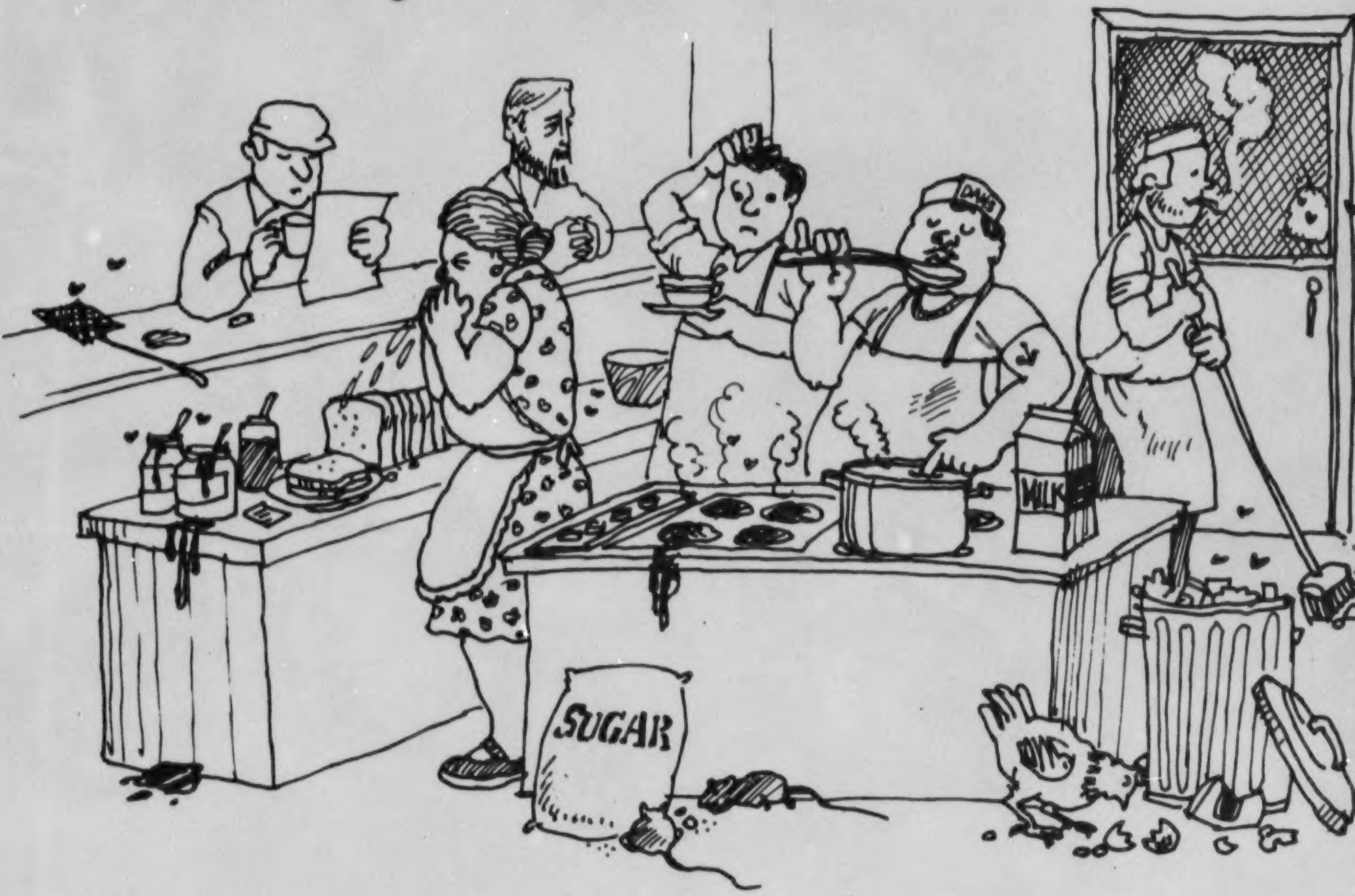
# Food Inspector's Check Sheet

Dripping pipes above food
Mice
Spiders and spiderwebs
Fly swatter used in eating area
Uncovered garbage can
Garbage on floor
Refrigerator not defrosted
Dishes put in sink without scraping
Sugar sack stored on floor
Puddings held without refrigeration and exposed to contamination
Uncovered food
Dirty cleaning rag on service counter
Litter on floor
Fingers inside drinking glasses
No hair net or hat
Animals in kitchen
Flies in kitchen and eating area
Hole in screen door
Tasting food with mixing spoon
Bottles of milk set next to hot stove
Soiled glasses placed with clean glasses
Sweeping during food service
Cockroaches
Thumb in soup
Sneezing in food
Soiled counter and tables
Dirty washroom
Knives and forks held by eating ends

Name________________________

# Dan's Dirty Diner

Make a list of the things the food inspector would find wrong in this restaurant.

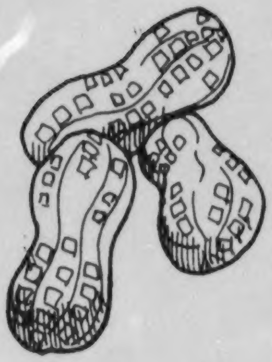

DAN'S
MILK
SUGAR
DAN'S

Name ______________________

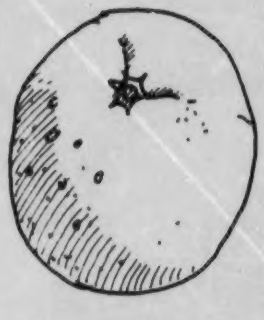
# Food Inspectors: Where and What

1. Underline the names of places a food inspector checks.
    a. Restaurant
    b. Shoe store
    c. Playground
    d. Fruit market
    e. Ice cream store
    f. Toy store
    g. Hospital cafeteria
    h. School kitchen
    i. Farm
    j. Ice cream factory
    k. Drive-in restaurant
    l. Grocery store

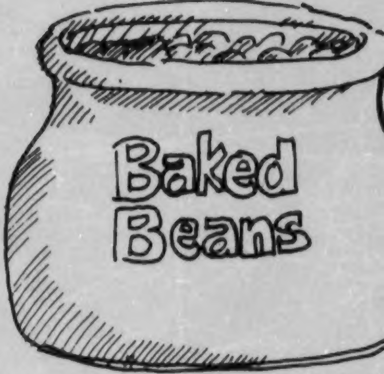
2. A food inspector checks for the following (mark with an X the question that the inspector is most responsible for answering):
    a. Does the menu sound delicious?
    b. Are the workers in the kitchen happy?
    c. Are the workers, the kitchen, and the food clean and sanitary?
    d. Are the food prices too low?



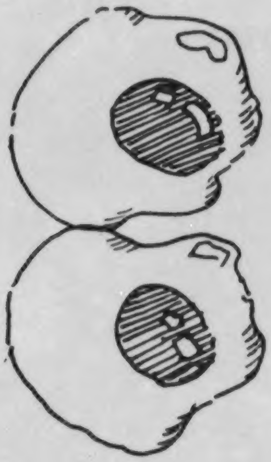
Peanuts



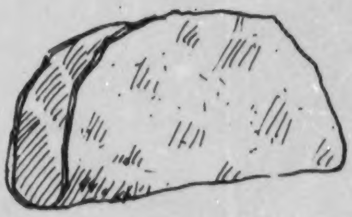
Orange


Baked
Beans

Baked Beans



Eggs



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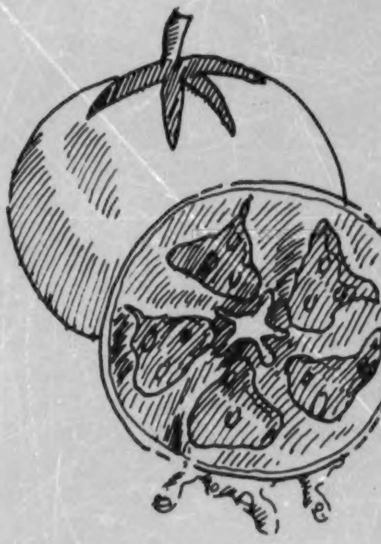
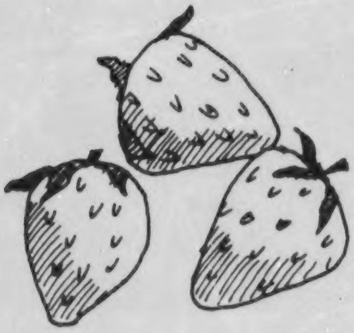
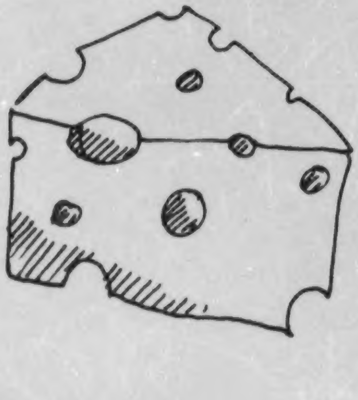


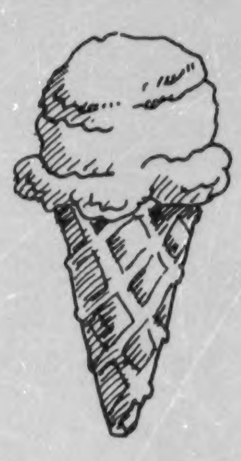
Tomatoes



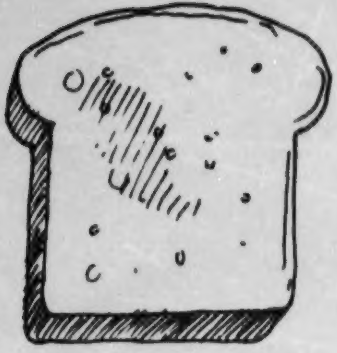
Strawberries



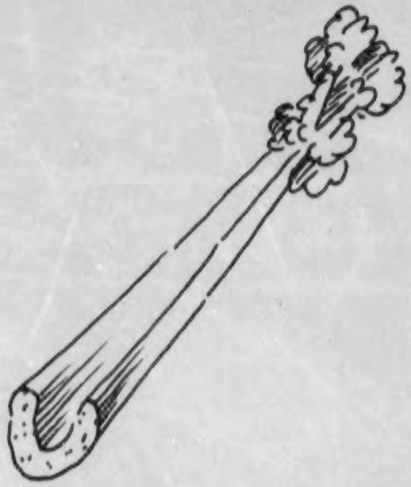
Cheese



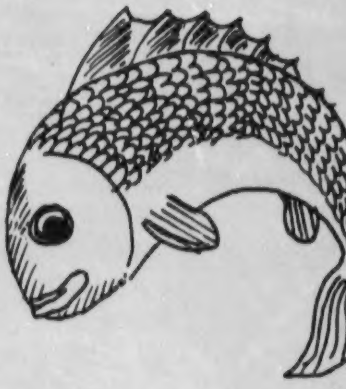
Ice cream



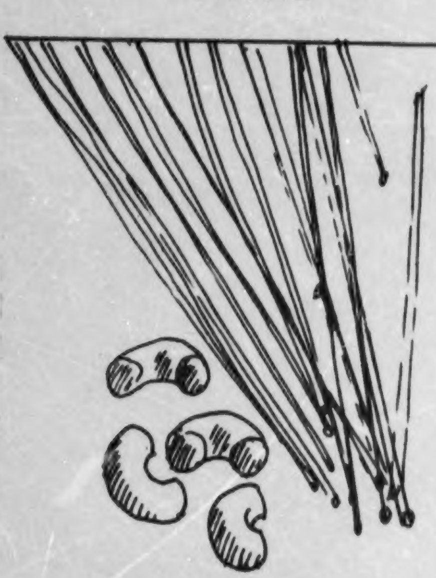
Bread



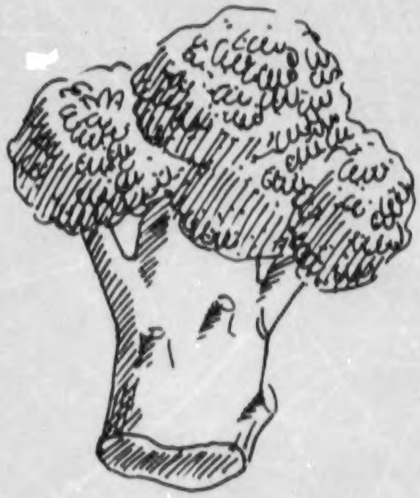
Celery



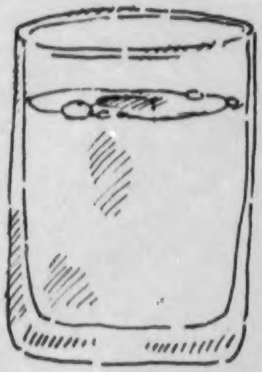
Fish



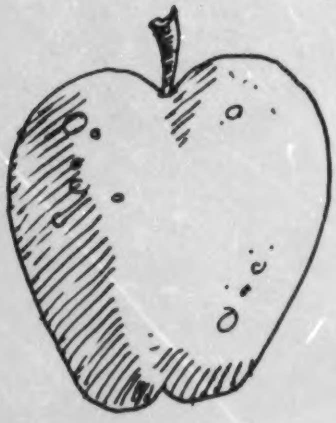
Pasta



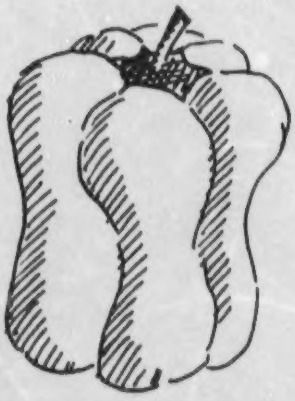
Broccoli



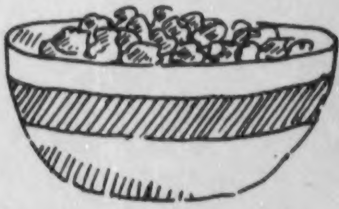
Milk



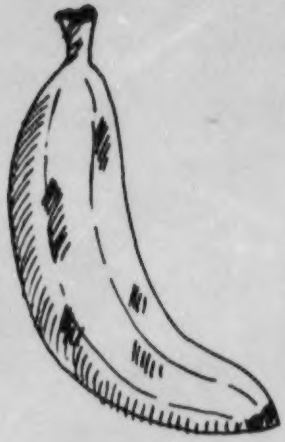
Apple



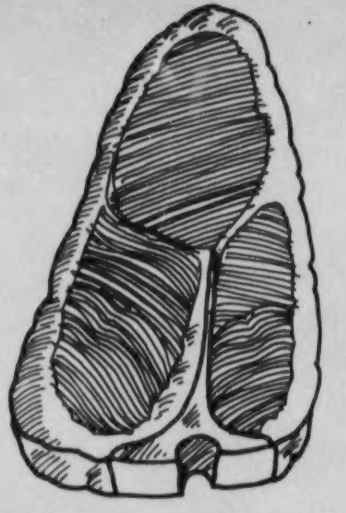
Green pepper



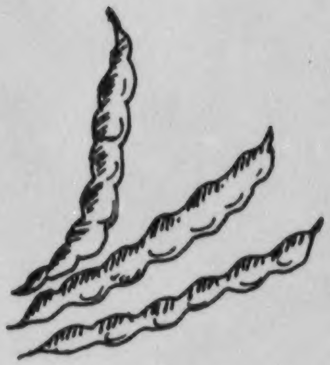
Cereal



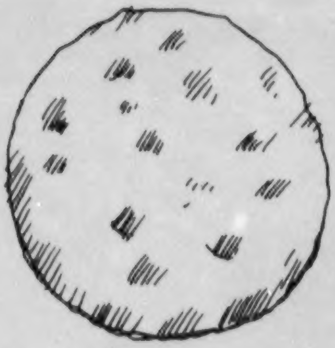
Banana



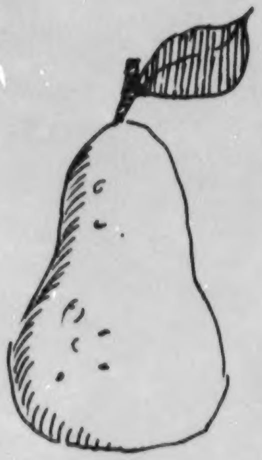
Steak



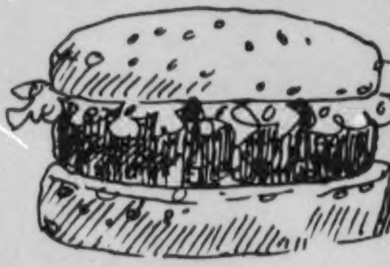
Beans



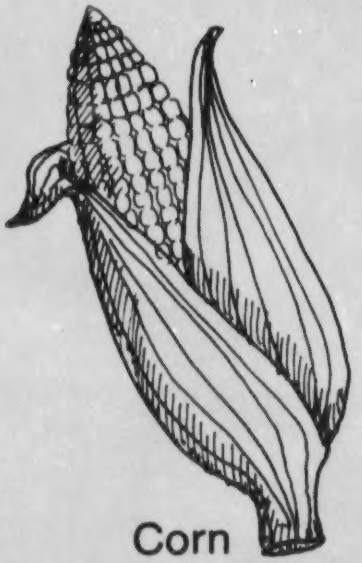
Tortilla



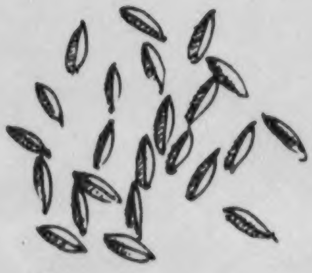
Pear



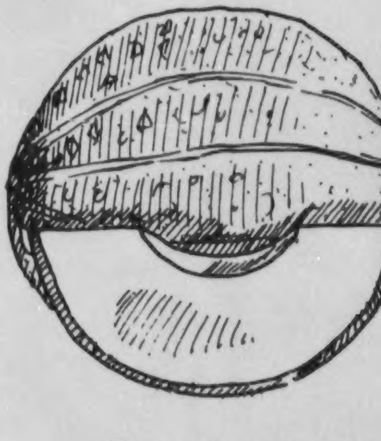
Hamburger



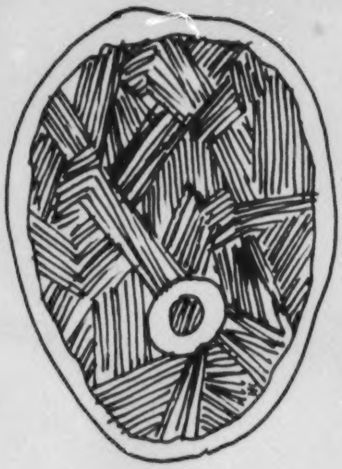
Corn



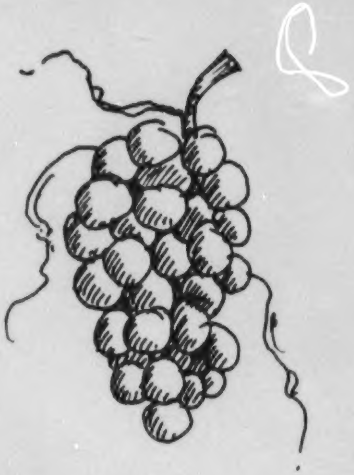
Rice



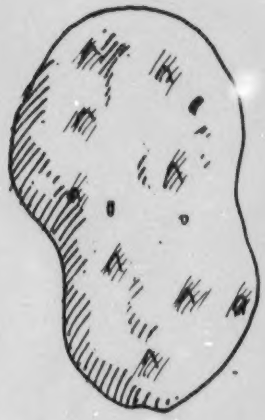
Cantaloupe



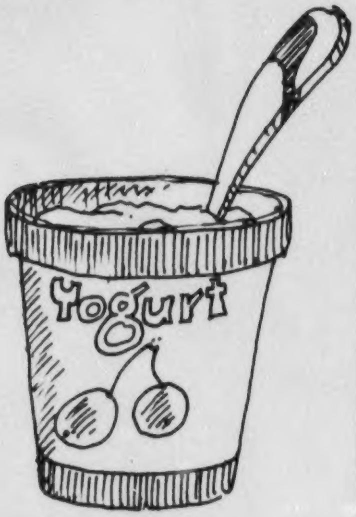
Ham



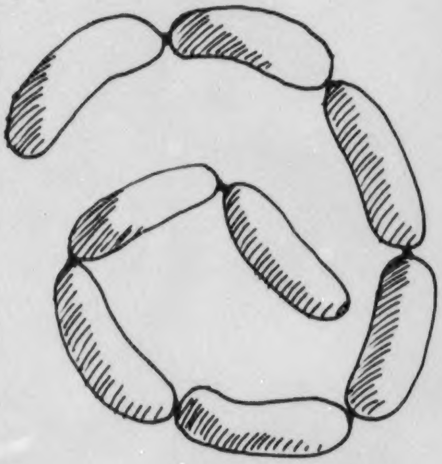
Grapes



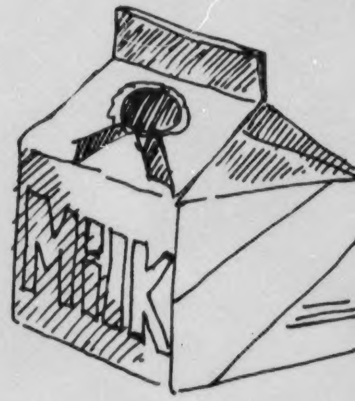
Potato



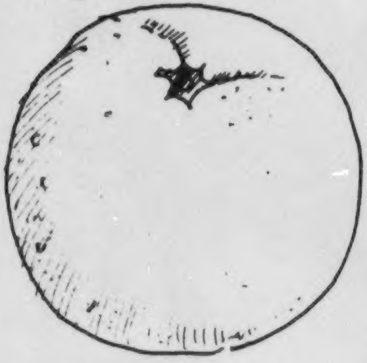
Yogurt



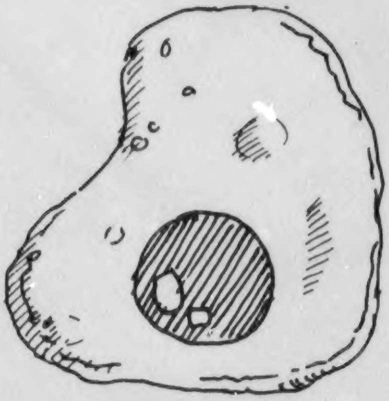
Sausage



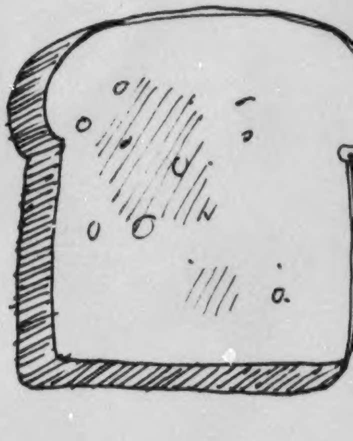
Mineral (calcium



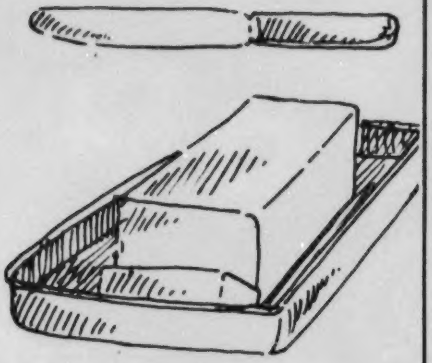
Vitamin C



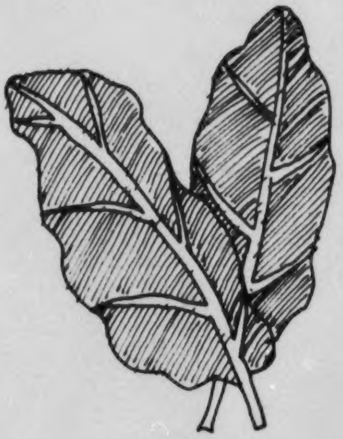
Protein



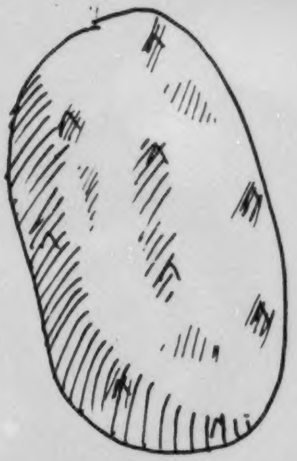
Vitamin B



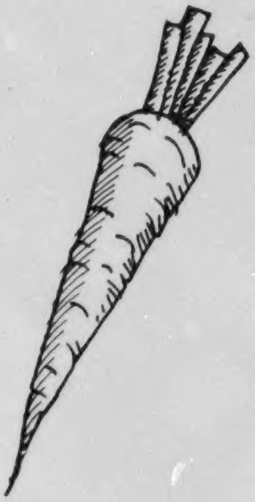
Fat



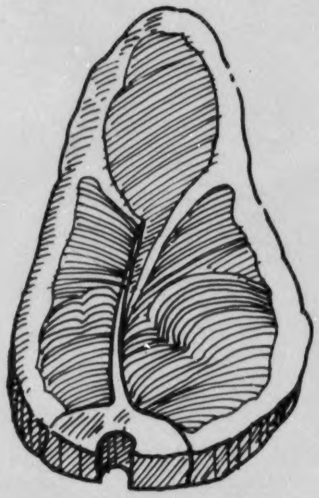
Mineral (iron)



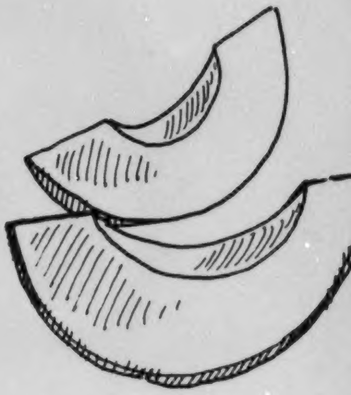
Carbohydrate



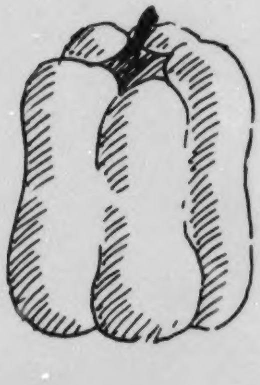
Vitamin A



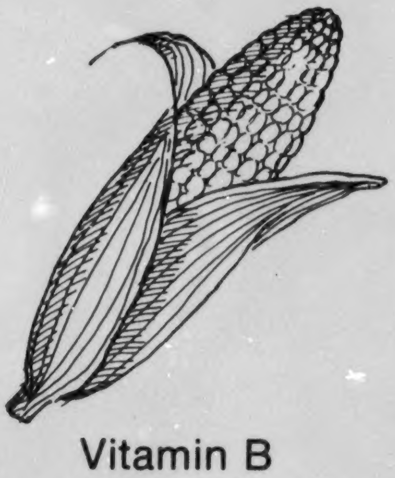
Protein



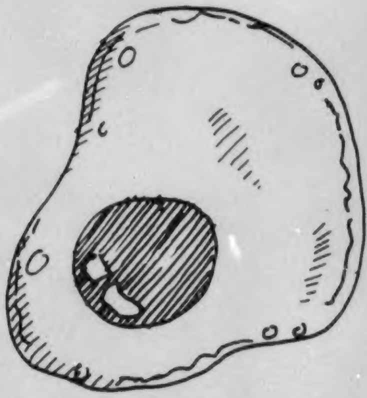
Vitamin A



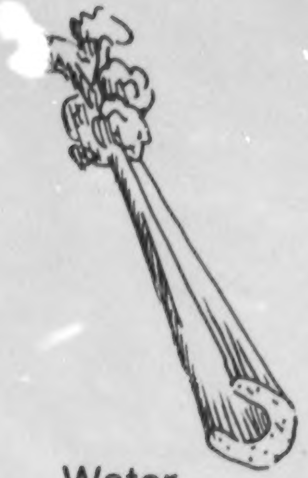
Vitamin C



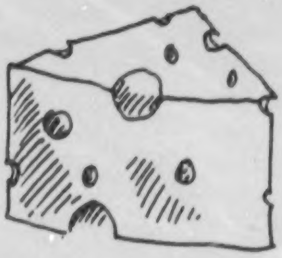
Vitamin B



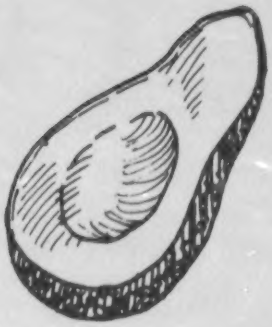
Vitamin A



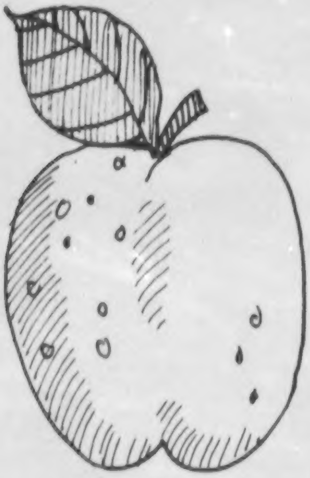
Water



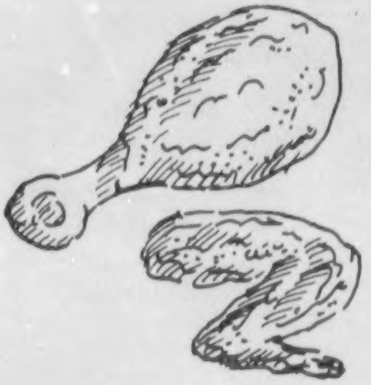
Mineral (calcium)



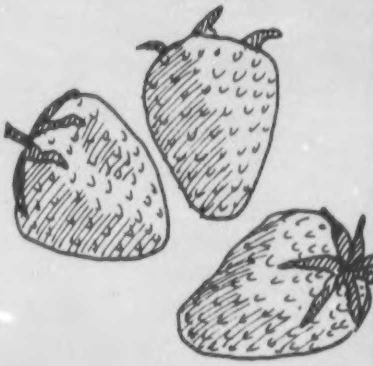
Fat



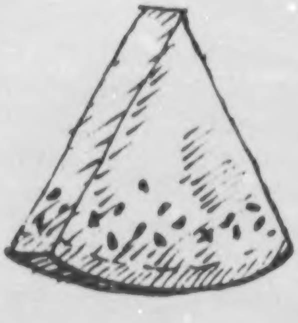
Carbohyrate



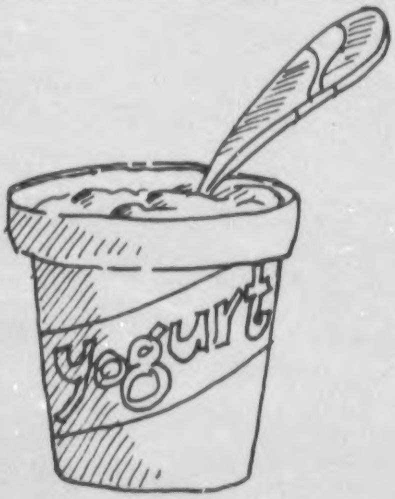
Protein



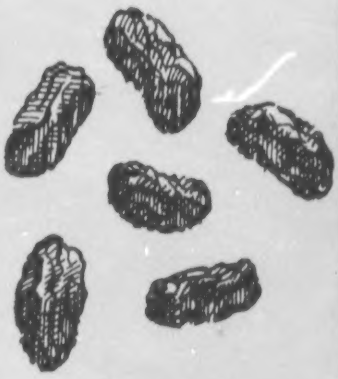
Vitamin C



Water



Mineral (calcium)



Mineral (iron)

Name____________________________

# Mystery Nutrients

Work the problems below and discover the nutrient groups:

| A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 100 | 54 | 200 | 9 | 11 | 48 | 160 | 97 | 307 | 87 | 76 | 744 |

| N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 867 | 715 | 242 | 12 | 19 | 900 | 6 | 0 | 175 | 20 | 36 | 80 | 109 |

1. Foods in the milk and the meat group, such as sausages, lamb chops, and ice cream, are high in this nutrient.

| | | |
|---|---|---|
| 44 | 166 | 33 |
| -33 | - 65 | -27 |
| ___ | ___ | ___ |

2. Milk, melons, orange juice, and soup are especially high in this nutrient; however, all food groups contain it.

| | | | | |
|---|---|---|---|---|
| 29 | 174 | 42 | 62 | 91 |
| - 9 | - 73 | -36 | -53 | -72 |
| ___ | ___ | ___ | ___ | ___ |

3. Foods in the bread and cereal group, such as rice, tortillas, and rolls, all are high in this nutrient.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 61 | 607 | 321 | 132 | 836 | 325 | 93 | 427 |
| - 7 | -506 | -302 | - 32 | -121 | -165 | -13 | -227 |
| ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ |

| | | | | |
|---|---|---|---|---|
| 220 | 167 | 566 | 143 | 1,021 |
| -201 | - 66 | -560 | -134 | - 121 |
| ___ | ___ | ___ | ___ | ___ |

4. Milk with its supply of calcium and meat with its iron are both foods which contain this nutrient group.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 637 | 24 | 672 | 7 | 15 | 91 | 60 | 429 |
| +107 | +73 | +195 | +2 | + 4 | +10 | +16 | +471 |
| ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ |

5. Fruits and vegetables, such as oranges and carrots, are very high in this nutrient group.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 142 | 70 | 3 | 100 | 326 | 28 | 433 | 263 |
| + 33 | +27 | +3 | + 1 | +418 | +69 | +434 | +637 |
| ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ |

6. Foods from the milk group and meat group, such as cheese, eggs, chicken, and fish, are good sources of this nutritient.

| | | | | | | |
|---|---|---|---|---|---|---|
| 120 | 14 | 172 | 2 | 3 | 46 | 272 |
| +122 | + 5 | +543 | +4 | +6 | +51 | +595 |
| ___ | ___ | ___ | ___ | ___ | ___ | ___ |

Name____________________

# What's in It for You?

Look at the foods below. Put a star next to the food that has the most of the nutrient listed above the foods. Write the name of the food group that the food with a star belongs to on the line next to it.

Example:

Protein

*Hamburger meat, poultry, fish, and beans group
Cookie____________________
Marshmallow ____________________
Space bar ____________________

1. Protein

Mushrooms ____________________
Soybeans ____________________
Mashed potato____________________
Apple juice ____________________

2. Calcium

Peanuts ____________________
Yogurt ____________________
Carrots ____________________
Limes ____________________

3. Iron

Chocolate cake ____________________
Lemonade____________________
Chicken____________________
Orange ____________________

4. Carbohydrate

Tortilla____________________
Roast beef ____________________
Butter____________________
Yogurt ____________________

5. Fat

Milk________________________________________

Corn oil ______________________________________

Sunflower seeds __________________________________

Banana ______________________________________

6. Vitamin C

Broccoli______________________________________

Chili beans ____________________________________

Hamburger bun__________________________________

Yogurt ______________________________________

7. Vitamin A

Carrots ______________________________________

Tuna________________________________________

Cheese ______________________________________

Spaghetti noodles__________________________________

Name________________________

# Nutrient Crossword Puzzle

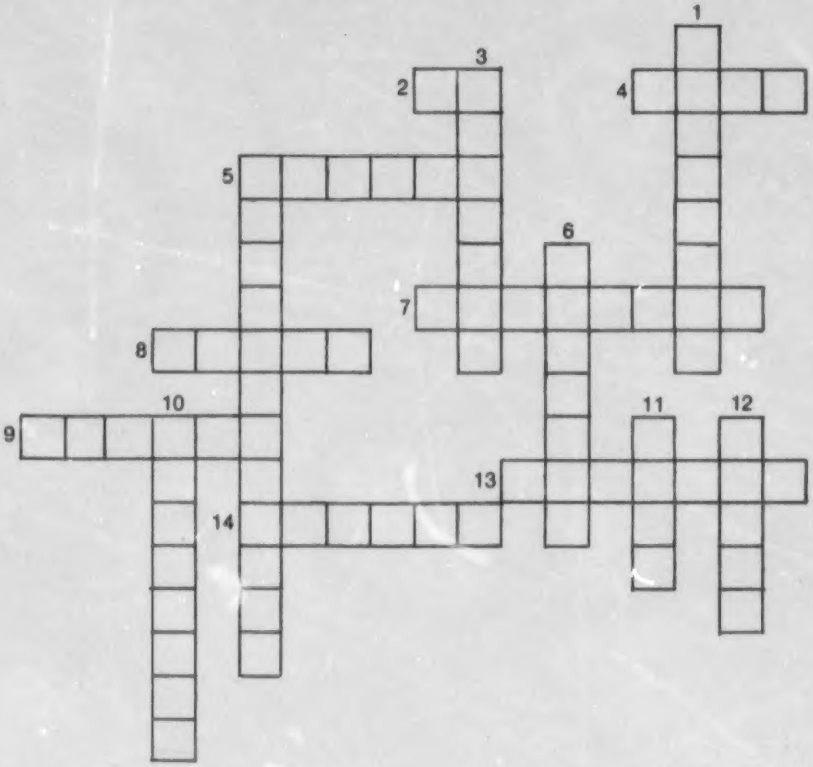
**List of Possible Answers**

repair
energy
vitamins
meat
A

carbohydrate
calcium
milk
cereal
C

bread
nutrient
regulate
protein
water

blood
mineral
fat
D
iron



**Down**

1. Fruits and vegetables are high in__________.
3. The milk group is high in the mineral__________.
5. Bread and rice are high in__________.
6. Chicken is high in__________.
10. Minerals and vitamins help__________ and maintain body functions.
11. The mineral iron is found in the__________group.
12. __________helps regulate body temperature and is found in milk, fruits, and vegetables.

**Across**

2. Two important vitamins found in citrus fruits and deep green and yellow vegetables are __________ and __________.
4. Protein is found in both the meat and the__________groups.
5. Carbohydrate can be found in large amounts in the bread and __________ group.
7. Carbohydrate, fat, water, protein, vitamins, and minerals make up the six __________ groups.
8. Iron is needed for healthy__________.
9. The nutrients, fat and carbohydrate, give the body__________.
13. Calcium and iron are both in the__________group.
14. Protein helps the body build and __________ tissues.

Name ______________________

# Matching Nutrients and Sample Food Sources

**Protein**

**Fat**

**Carbohydrate**

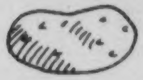
**Vitamin A**

**Iron**

**Vitamin C**

**Calcium**

Potato and macaroni



Eggs and fish

Butter and oil

Ice cream and cheese

Orange and tomato

Spinach and hamburger

Carrot and green pepper

Name ____________________

# Nutrient Know-How

1. Which food group has the most fat?
   a. Milk and Cheese
   b. Bread and Cereal
   c. Fruit and Vegetable

2. Which food group is the highest in the mineral iron?
   a. Bread and Cereal
   b. Meat, Poultry, Fish, and Beans
   c. Fruit and Vegetable

3. Which food would you choose to obtain plenty of carbohydrate?
   a. Rice
   b. Cheese
   c. Fish

4. Which food group has the most protein?
   a. Bread and Cereal
   b. Fruit and Vegetable
   c. Meat, Poultry, Fish, and Beans

5. Which food group has the most carbohydrate?
   a. Milk and Cheese
   b. Meat, Poultry, Fish, and Beans
   c. Bread and Cereal

6. A food very high in vitamin C is:
   a. Tomatoes
   b. Celery
   c. Pears

7. A food high in iron is:
   a. Hamburger
   b. Cottage cheese
   c. Potato

8. A food high in calcium is:
    a. Grape juice
    b. Banana
    c. Yogurt

9. In which food groups would you find a lot of the nutrient water?
    a. Fruit and Vegetable and Milk and Cheese groups
    b. Bread and Cereal group
    c. All of the food groups

10. Which food has the most vitamin A?
    a. Tuna
    b. Toast
    c. Carrot

11. Which food has the most fat?
    a. Baked potato
    b. Bacon
    c. Peaches

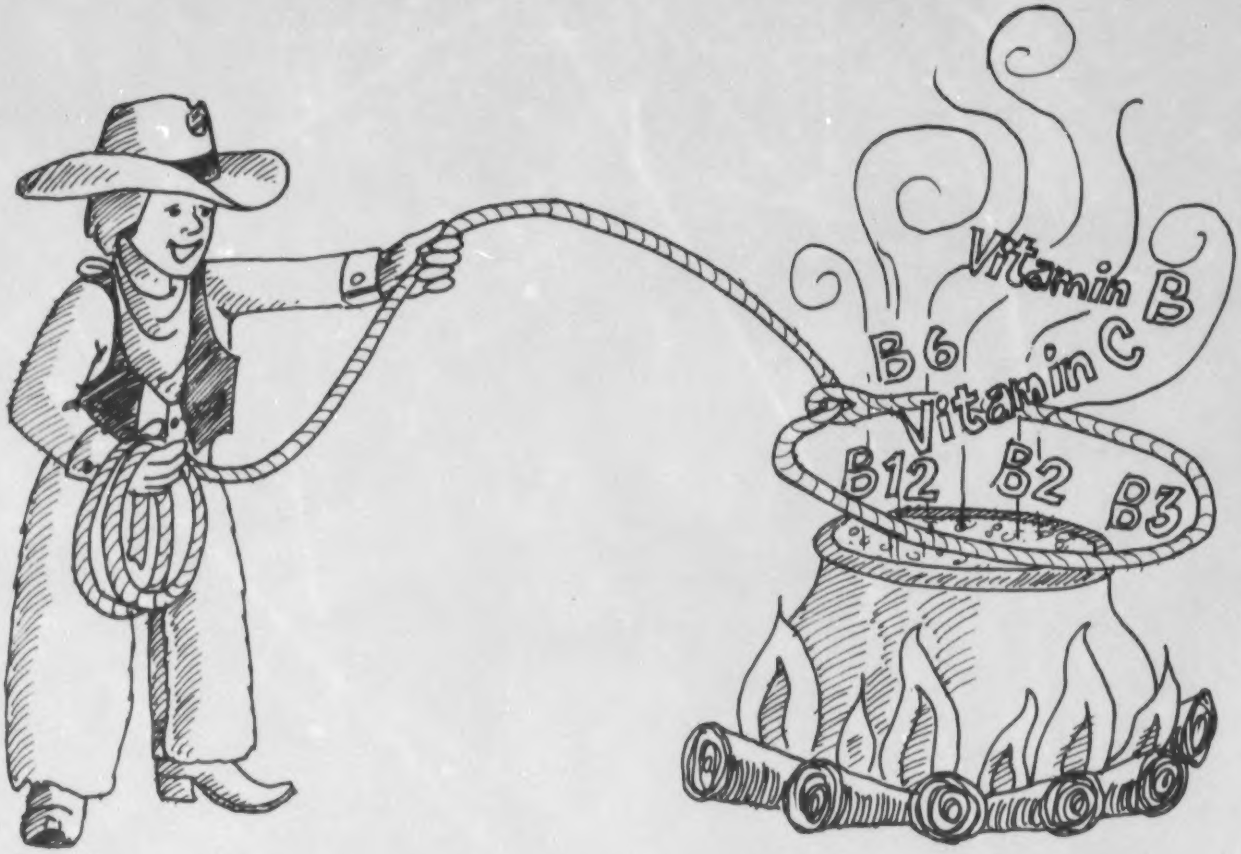
12. Which food has the most protein?
    a. Pancakes
    b. Cheese
    c. Oranges

13. Which food has the most water?
    a. Cheese
    b. Soup
    c. Crackers

14. Which food group has the most vitamins?
    a. Meat, Poultry, Fish, and Beans
    b. Milk and Cheese
    c. Fruit and Vegetable

Name________________________

# Save Those Nutrients, Partner!



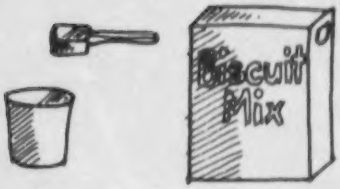
You have a choice when you cook vegetables: you can either save or destroy the nutrients in them. It is especially easy to destroy vitamins C and B, because too much heat harms them, and they dissolve in water. To retain these nutrients, follow these suggestions:

1. If the vegetable has a skin, cook it with the skin on. Leave the vegetable whole, or cut it in large pieces when you cook it. This helps to keep the vitamins from dissolving in the water.
2. Use as little water as possible, and have the water boiling when you add the vegetable. Use leftover water in a sauce, gravy, or soup. Then, even if some of the nutrient does dissolve in the water, you can eat it.
3. Cover the pan with a tight-fitting lid. This keeps the steam from escaping and the vegetables will cook quickly in a little water.
4. Don't overcook the vegetable. Cook just until tender so the nutrients are not destroyed by the heat.

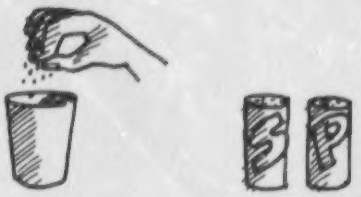
—Adapted from the University of California Cooperative Extension

Name______________________

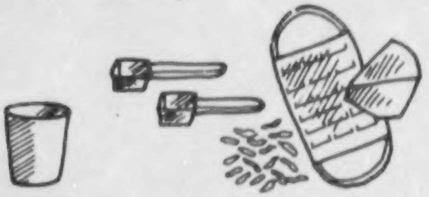
# Zucchini Pennies



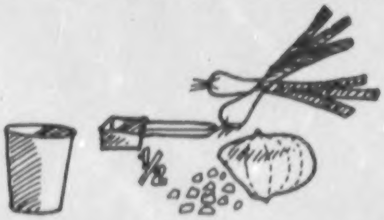
1. Place 1 tsp. (2.5 g) of biscuit mix in a custard cup.



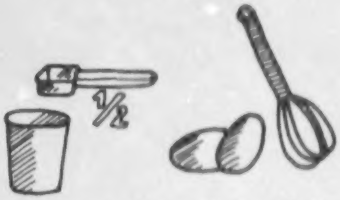
2. Add a pinch of salt and pepper.



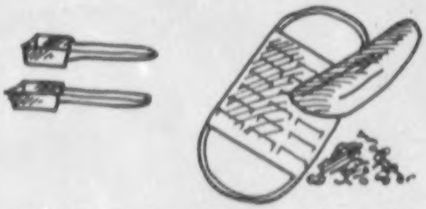
3. Add 2 tsp. (5 g) of grated cheese.



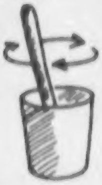
4. Add ½ tsp. (3.5 g) of grated onion.



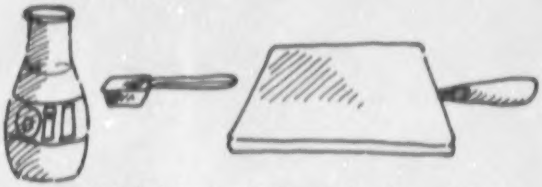
5. Add ½ tsp. (2 mL) of beaten eggs.



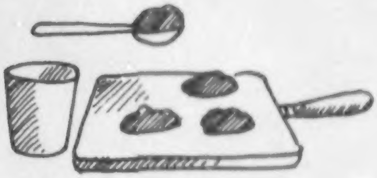
6. Add 2 Tblsp. (42 g ) of grated zucchini.



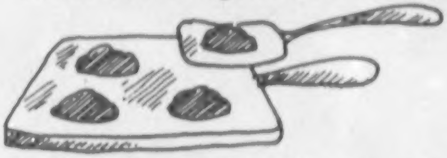
7. Mix.



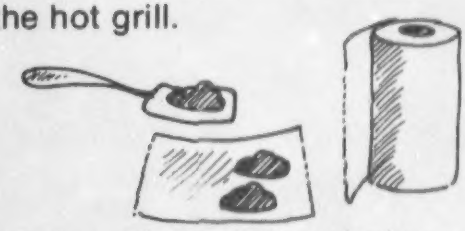
8. Heat 1 Tblsp. (15 mL) of vegetable oil on the grill or in a fry pan.



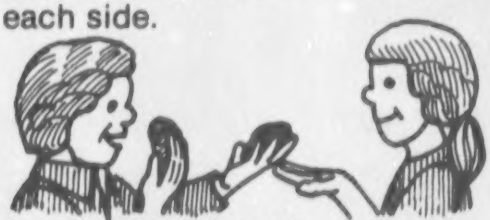
9. Place the zucchini mixture on the hot grill.



10. Let cook for 2 to 3 minutes on each side.



11. Take off the grill and place on paper towel.



12. Share with a friend!

Name______________________________

# Hidden Words

Circle the Hidden Words.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| B | C | Y | R | P | P | W | N | O | N |
| O | N | R | S | R | M | N | A | V | U |
| O | I | F | R | E | S | H | I | E | T |
| F | M | R | M | P | I | C | H | R | R |
| D | A | I | U | A | R | A | W | C | I |
| I | T | T | F | R | Y | N | A | O | E |
| L | I | S | Z | E | A | I | D | O | N |
| B | V | O | S | A | P | P | D | K | T |
| D | P | M | A | E | T | S | E | W | E |
| E | C | M | S | C | K | A | N | G | L |
| S | H | A | N | D | L | I | N | G | B |
| T | O | S | S | M | G | Y | A | K | A |
| R | P | L | O | N | F | X | C | L | T |
| O | P | L | U | Q | I | M | O | O | E |
| Y | E | Q | R | B | S | O | A | K | G |
| W | D | Z | C | R | L | E | W | T | E |
| Z | G | Y | E | W | H | O | L | E | V |

Words to find:

canned
chopped
destroy
fresh
fry
handling
lid
nutrient
overcook
prepare
raw
soak
source
steam
stirfry
vegetable
vitamin
whole

After finding the hidden words, list three circled words that are ways foods can be prepared to save vitamins.

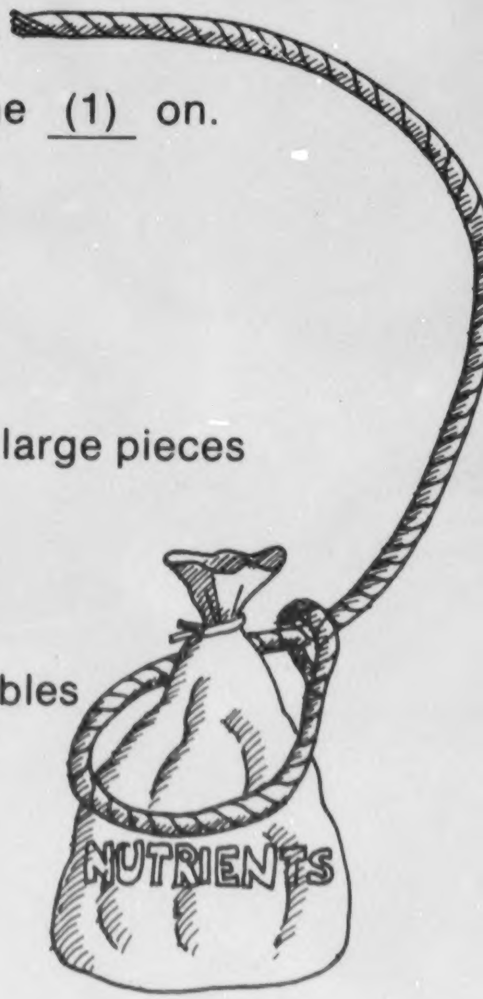
______________________

______________________

______________________

Name________________________

## Save Those Nutrients



If a vegetable has (1), cook it with the (1) on.

Use leftover vegetable water in a (2).

Heat can easily destroy (3) B and C.

Do not (4) the vegetables.

Vegetables should be cooked (5).

Leave the vegetable (6) or cut it into large pieces when you cook it.

Cook just until (7).

Use as little (8) as possible.

(9) the water used in cooking vegetables for soup or gravy.

**Save Those**

(1) ___ ___ ___ N
(2) ___ ___ U ___
(3) ___ ___ T ___ ___ ___ ___ ___
(4) ___ ___ ___ R ___ ___ ___ ___
(5) ___ ___ I ___ ___ ___ ___
(6) ___ ___ ___ ___ E
(7) ___ ___ N ___ ___ ___
(8) ___ ___ T ___ ___
(9) S ___ ___ ___

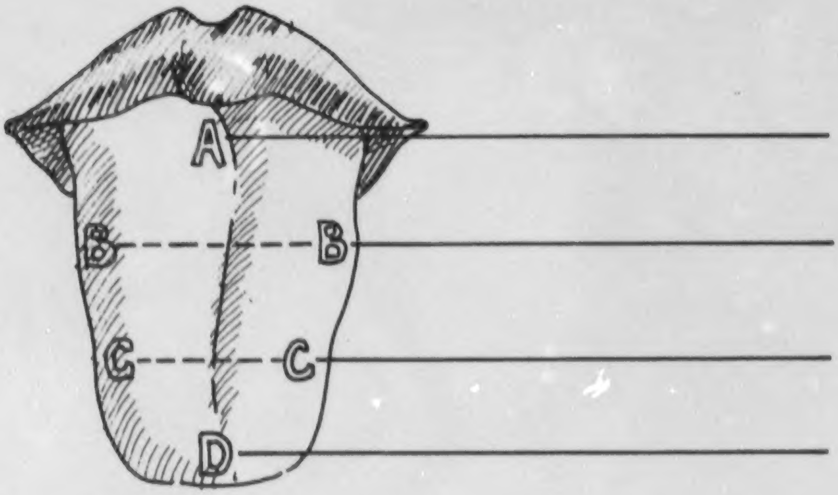
Name________________________

# Map Out Your Tongue

What are the four basic flavors you can taste with your tongue?

1. Sweet
2. Sour
3. Bitter
4. Salty

In what areas of the tongue do you taste each of the above flavors?



Name________________________

# It's a Taste-In!

Name the five senses used to "taste" food.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________

Name at least one food that can be easily identified by each sense.

Example: Touch-raisin

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________

# Lunch Menu

## Cascade Union Elementary School District Anderson, California

Fresh milk served with all meals

September 2 through October 3, 1980 All menus subject to change

| Monday, September 1 | Tuesday, September 2 | Wednesday, September 3 | Thursday, September 4 | Friday, September 5 |
|---|---|---|---|---|
| Labor Day Holiday | Glad You're Back Menu<br>Hot Diggity Dog Day with pickle slices<br>French fries with catsup<br>Ice cold watermelon | Batter dip fish sticks with tartar sauce<br>Scoop of mashed potato<br>Tomato wedge<br>Applesauce pan bread | Sloppy Joe on round bun<br>Fresh green salad with 1,000 island dressing<br>Cantaloupe slice | Cold turkey sandwich with lettuce<br>Carrot stick<br>Grape juice cup<br>Cinderella cake with frosting |
| Monday, September 8 | Tuesday, September 9 | Wednesday, September 10 | Thursday, September 11 | Friday, September 12 |
| Corn Dog with mustard packet<br>Tator Barrels<br>Crispy celery<br>Purple plums<br>Lemonade | Tacos with shredded lettuce and cheese<br>Corn kernels<br>Icy watermelon | Fresh oven baked pizza with salami and cheese<br>Cucumber stick<br>Mixed up vegetables<br>Chocolate pudding | Barbecued turkey over a bun<br>Hot buttered green beans<br>Fresh fruit cup<br>Roasted peanuts | Submarines with bologna, cheese, and lettuce<br>Vegetable sticks<br>Chilled cantaloupe |
| Monday, September 15 | Tuesday, September 16 | Wednesday, September 17 | Thursday, September 18 | Friday, September 19 |
| Burritos<br>Mexican rice<br>Fresh green salad with Spanish dressing<br>Strawberry shortcake with whipped topping | Texas Straw Hat<br>Crunchy carrot stick<br>Corny corn<br>Raspberry jello with fruit and whipped topping | Oven fried chicken<br>Scoop of mashed potato<br>Hi protein fruit bar<br>Chilled cantaloupe | Oven grilled turkey and cheese sandwich<br>Tomato wedge<br>Fresh frozen peas<br>Chilled applesauce | Picnic Lunch<br>Pork and beans without the pork<br>Potato salad<br>Peanut oatmeal cookie<br>Slice of cold watermelon |
| Monday, September 22 | Tuesday, September 23 | Wednesday, September 24 | Thursday, September 25 | Friday, September 26 |
| Build Yourself Burger with bun, pattie, lettuce, and tomato<br>Fries with catsup packet<br>Cantaloupe wedge | Toasted cheese sandwich<br>Crispy celery sticks<br>Lime Jello with pears<br>Tomato wedges<br>Peanut butter brownie | Chicken Enchilada Bake<br>Fresh green salad with green goddess dressing<br>Vegetable medley<br>Orange juice and breakfast cake | Turkey gravy over steamed rice<br>Buttered green beans<br>Fresh fruit salad<br>Cowboy bread | Beef sandwich roll<br>Whole kernel corn niblets<br>Crispy celery sticks<br>Icy cold watermelon |
| Monday, September 29 | Tuesday, September 30 | Wednesday, October 1 | Thursday, October 2 | Friday, October 3 |
| Hangover sandwich with bologna, cheese, and lettuce<br>Tomato wedge<br>Chilled applesauce<br>Roasted peanut cup | Italian-American Spaghetti<br>Fresh green salad and 1,000 island dressing<br>Vitamin C cup<br>Warm buttered fruit bread | Toastie Dog with pickle slices<br>French fries with catsup<br>Mixed up vegetables<br>Slice of icy melon | Roast beef and noodles<br>Cole slaw with creamy dressing<br>Fresh frozen peas<br>Banana nut bread | Ho Down Chili<br>Golden corn bread with honey butter<br>Strawberry jello with bananas, fruit and whipped topping |

# Nutrients in the Food Groups

| Nutrients | Meat, Poultry, Fish, and Beans | Milk and Cheese | Fruit and Vegetable | Bread and Cereal | Extra |
|---|---|---|---|---|---|
| Protein | Meats (beef, veal, lamb, pork, including variety meats), fish, poultry, shellfish, eggs, dried peas, dried beans, nuts, nut butters (especially peanut butter), and seeds | Milk (all kinds), cheese (all kinds), and yogurt | | Cereals, breads | |
| Carbohydrate<br>Starches and sugar<br>(Alcoholic beverages when included in the diet contribute to the available carbohydrate and total calories.) | Dried beans and peas | | Potatoes, lima beans, sweet potatoes, Jerusalem artichokes, corn, fruits, sweetened fruits, dried fruits, bananas, and dates | Cereal grains, bread, cereal, crackers, flour and flour products, grits, hominy, rice, cornmeal, pasta products (noodles, macaroni, spaghetti) | Cakes, cookies, baked goods, pastries, jam, jelly, syrup, candy and other sweets, sugar, honey, molasses |
| Fat<br>(Many medical authorities recommend that no more than 35 percent of the total daily calories come from fats.) | Meats (fat within the meat), peanut and other nut butters, and nuts | Cream, cream cheese, whole milk cheeses, and ice cream | Avocados | | Butter, margarine, salad dressings, mayonnaise, salad and cooking oils, shortening, lard, bacon, salt pork, chocolate |
| Vitamin A | Liver, egg yolk, and fish liver oils | Whole milk, cream, fortified skim milk, cheddar type cheese, ice cream, and cream cheese | Deep yellow or orange vegetables (carrots, sweet potatoes, winter squash, pumpkin); deep yellow or orange fruits (apricots, cantaloupe, yellow peaches, persimmon); dark leafy greens (kale, swiss chard, mustard greens, turnip greens, beet greens, collards, and spinach); tomatoes, asparagus, broccoli, parsley, and prunes | | Butter, fortified margarine |

| Nutrients | Meat, Poultry, Fish, and Beans | Milk and Cheese | Fruit and Vegetable | Bread and Cereal | Extra |
|---|---|---|---|---|---|
| Vitamin C (Ascorbic acid) | Liver | | Citrus fruits and juices (orange, grapefruit, lemon, lime, tangelo, tangerine); tomatoes, strawberries, cantaloupe, dark leafy greens, broccoli, green cabbage, red and green peppers, parsley, potatoes, rutabaga, turnips, and cauliflower | | |
| Calcium | Clams, oysters, canned fish containing bones (salmon, sardines, and mackerel) | All milk (especially rich source), cheese, cottage cheese, yogurt, and ice cream | Broccoli, turnips greens, mustard greens, kale, and collards | | |
| Iron | Liver, heart, kidney, red meats, poultry, fish, oysters, shellfish, dried beans and peas, and nuts | | Dried fruit (apricots, prunes, raisins, figs, and dates), dark leafy greens, and parsley | Whole grain and enriched breads and cereals, enriched pasta products, and enriched rice | Molasses |

I-51

OTHER NUTRIENTS—About 45 different nutrients are known to be necessary for growth, development, and good health. These nutrients are needed by the body to build, maintain, and repair tissues. Food provides these nutrients, but no one food contains all the nutrients in the exact amounts required by the body. The amounts needed differ with age, activity, sex, state of health, pregnancy, lactation, etc., but all people at all ages need the same basic nutrients. This chart summarizes information on the nutrients we especially need to take into consideration when planning meals.

The other nutrients are usually found widely distributed in foods, and a deficiency very rarely occurs when a variety of different foods are eaten.

Name________________

# School Lunch Menu Evaluation Form

| **Food Groups** | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| Meat, Poultry, Fish, and Beans | | | | | |
| Fruit and Vegetable | | | | | |
| Bread and Cereal | | | | | |
| Milk and Cheese | | | | | |
| **Six Nutrient Groups** | | | | | |
| Protein | | | | | |
| Fat | | | | | |
| Carbohydrate | | | | | |
| Vitamins | | | | | |
| Minerals | | | | | |
| Water | | | | | |

| | *Yes* | *No* |
|---|---|---|
| Does each lunch contain all four food groups? | ___ | ___ |
| Does each lunch contain all six nutrient groups? | ___ | ___ |

Name____________________

# School Lunch Pattern

Milk

½ pint

Meat, Poultry, or Fish

2 oz. serving

or

Meat alternate

eggs beans
peanut butter

Fruit

or

Vegetable

¾ cup of
two or more

Bread

1 slice

or

pasta or
grains

½ cup

Name______________________________

# My Favorite Lunches for a Week

Under each day of the week prepare a menu you would like to have served in the cafeteria. Each menu must be different.

Remember: 2 ounces of meat or meat alternate each day
¾ cup fruit and vegetables each day
8 servings of bread or bread alternate each week
½ pint milk each day

| Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|
| | | | | |

Name____________________

# Birthday Foods

| Foods | Reasons for Choosing |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Name______________________

Dear Parents,

Our class will be discussing some factors to consider when buying food. I would like the children to become aware of some of the things you take into consideration in choosing one item over another, whether it be cost, quantity, quality, sale items, fresh, canned, frozen, or other. I would also like the children to know that there are many ways of making decisions about what foods to buy.

It would be appreciated if you would complete the opinionnaire and discuss your answers with your child. You may wish to have your child respond to the answers before writing in your responses. There are no right or wrong answers.

Thank you for your cooperation.

Sincerely,

______________________

Please return the opinionnaire by ______________ .

Name________________________

# Opinionnaire

*Directions:* Please finish these sentences.

1. To me, using food coupons from the newspaper is ________________________________________________.

2. In choosing the size of a food container, I ________________________________________________.

3. The thing I like best about my supermarket is ________________________________________________.

4. In selecting a new food item, I usually ________________________________________________.

5. In buying meat, I ________________________________________________.

6. When I buy dairy products, I ________________________________________________.

7. I do or do not read the labels on cans. ________________________________________________

8. When I buy fresh produce, I ________________________________________________.

9. When an item is advertised as a "special buy" in the grocery store, I ________________________________________________.

10. Other comments:

Please return by____________________.

Name________________________

# My Priorities in Career Decision Making

*Directions:* Put a number "1" next to the item that would be most important to you in choosing a career; the number "2" next to the second most important thing; and so on.

__ Pays lots of money

__ Working with people instead of alone

__ Power over other people, being the boss

__ Gives me time with my family and friends

__ Get to do different things every day

__ Gives me a sense of accomplishment

__ Keeps me busy all the time

__ Is easy work, do not have to do much

__ Chance to help other people

__ Challenges me so that I am always learning

__ Working alone instead of with other people

__ Get to do the same things over and over again

Name____________________

# Protein, Carbohydrate, and Fat

Be sure to read directions carefully.

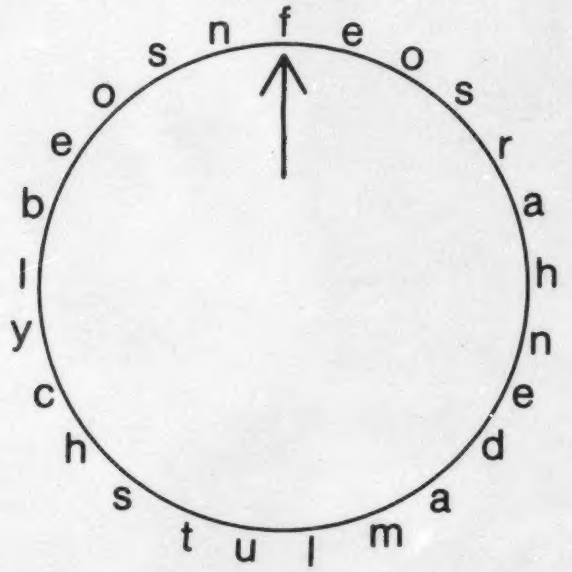
Place a check in the box beside each section as you complete it.

☐ 1. Nutrients are substances in food that help us to be healthy. Two nutrients that give us energy are fat and carbohydrate. Protein can be used for energy if the diet lacks fat or carbohydrate.

Fill in the blanks:

Energy is obtained mainly from ____________ and ____________; the body can also use ____________ for energy if necessary.

☐ 2. To find out why the body needs protein, begin at the arrow and read every other letter until all the letters have been used.



Write the answer here ____________________________________________

____________________________________________________________

☐ 3. Legumes are plants. They belong in the meat group because they contain protein. Common legumes are dried peas, pinto beans, chili beans, navy beans, and black-eyed peas. Write the names of three legumes here.

____________________ ______________ ________________

☐ 4. Carbohydrates are found in breads, cereals, fruits, and vegetables. Work with another person in your group. I worked with __________. Time each other. Write as many carbohydrate foods as you can in one minute.

________________________ ________________ ____________________

________________________ ________________ ____________________

________________________ ________________ ____________________

☐ 5. Our body needs fat to provide us with energy, to protect our bones and organs, and to keep us from feeling too hungry between meals.

A. Write something you do that requires a lot of energy.

______________________________________________________________

B. Pinch your upper arm with your thumb and middle finger. Could you pinch about ¼ inch, ½ inch, 1 inch, or 1½ inches?
This helps protect the bones in your arm.

C. What food have you eaten recently that is high in fat?

______________________________________________________________

☐ 6. Fill in the blanks in the following sentences. Over each letter write the letter that appears before it in the alphabet.

Too much fat in the diet can make a person $\underset{\text{PWFSXFJHIU}}{\_\_\_\_\_\_\_\_\_\_}$. Extra $\underset{\text{QPVOET}}{\_\_\_\_\_\_}$ can be a strain on the heart.

We need $\underset{\text{NPSF}}{\_\_\_\_}$ energy for $\underset{\text{SVOOJOH}}{\_\_\_\_\_\_\_}$ than for $\underset{\text{XBMLJOH}}{\_\_\_\_\_\_\_}$. It does not take much $\underset{\text{FOFSHZ}}{\_\_\_\_\_\_}$ to watch $\underset{\text{UW}}{\_\_}$. Good snacks are low in $\underset{\text{GBU}}{\_\_\_}$ and $\underset{\text{TVHBS}}{\_\_\_\_\_}$, but provide vitamins and minerals.

☐ 7. From magazines cut out at least 15 pictures of food that contain a major source of protein, carbohydrate, or fat (a minimum of five pictures for protein, carbohydrate, and fat). Mount the pictures of protein sources on green paper, carbohydrate sources on yellow paper, and fat sources on orange paper.

Name________________________

# Three Nutrients in a Pocket

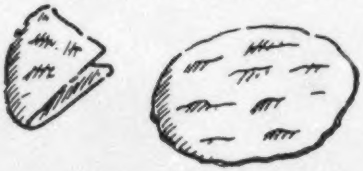
## Ingredients

- 8 loaves pocket or pita bread, cut in fourths
- 1 avocado, mashed and mixed with 2-4 Tblsp. (30-60 mL) mayonnaise and 1 Tblsp. (15 mL) lemon juice
- 2 c. (8 oz. or 227 g) cheese, grated
- 1 12 oz. (340 gm) can kidney beans, drained and chopped
- 2 c. (114 g) (1/3-1/2 head) shredded lettuce
- 3/4 c. (177 mL) yogurt, mixed with 1/4 c.(59 mL) hot chili salsa

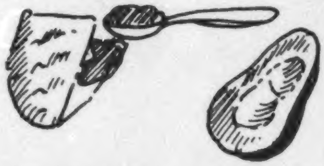
## Equipment

- Bowls
- Forks
- Knives
- Grater
- Measuring spoons and cups
- Can opener

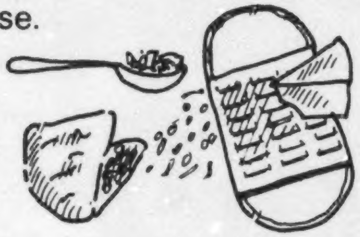
1. Take 1/4 loaf of pocket bread. Open.



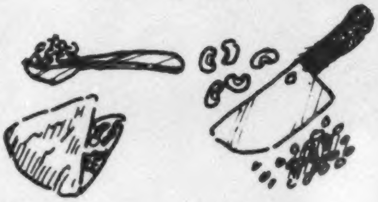
2. Spread on 1 tsp. avocado inside pocket.



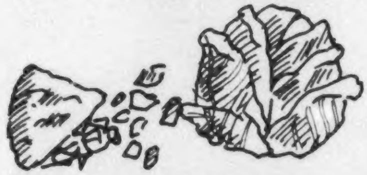
3. Sprinkle with 1 Tblsp. shredded cheese.



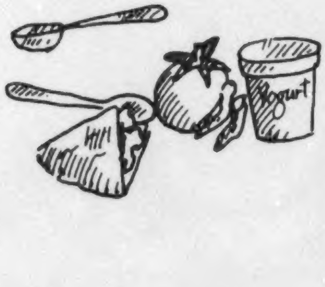
4. Add 1 heaping tsp. chopped beans.



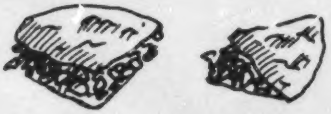
5. Add a pinch of shredded lettuce . . .



6. and 2 tsp. yogurt sauce.



7. Close pocket and enjoy!



Name________________________

# Word Search:
# Protein, Fat, and Carbohydrate

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | I | C | H | I | C | M | O | R | C | H | I | C | K | E | N | L | N |
| H | A | F | C | H | B | U | T | T | E | G | G | S | H | C | I | P | C |
| E | S | I | A | N | N | O | Y | A | M | V | B | A | N | O | B | O | O |
| M | G | R | A | P | E | F | R | U | I | T | I | Y | E | K | R | U | T |
| A | P | P | E | F | A | T | C | E | R | E | A | L | L | A | E | T | T |
| P | A | T | S | O | T | H | A | E | R | C | B | C | R | E | A | M | A |
| O | B | U | T | T | E | R | S | T | E | A | K | C | T | N | D | G | G |
| Y | U | C | R | E | S | C | Y | H | T | U | N | A | U | E | P | R | E |
| N | U | T | S | A | T | U | P | E | A | N | U | T | S | R | I | A | C |
| A | T | E | N | H | M | A | G | T | U | B | L | A | S | F | E | P | H |
| I | E | N | G | Y | C | E | F | A | C | O | O | K | I | E | S | T | E |
| S | A | U | U | R | V | S | E | I | R | F | H | C | N | E | R | F | E |
| B | R | M | A | P | G | N | I | S | S | E | R | D | D | A | L | A | S |
| S | H | I | M | U | D | O | W | T | H | P | I | P | F | A | M | O | E |

| Protein foods | Fat foods | Carbohydrate foods |
|---|---|---|
| | | |

Name____________________

# Laboratory Sheet

## Test For Protein (Reagent: Nitric Acid)

| Food sample | Reaction | Result |
|---|---|---|
| Cheese | | |
| Hard cooked egg | | |
| Tuna | | |
| Bread | | |
| Milk | | |
| Apple | | |

## Test For Carbohydrate (Reagent: Iodine)

| Food sample | Reaction | Result |
|---|---|---|
| Water | | |
| Water with cornstarch | | |
| Bread | | |
| Tuna | | |
| Cracker | | |
| Apple | | |
| Hard cooked egg | | |
| Yogurt | | |
| Potato | | |

## Test For Fat (Using Paper Bag)

| Food sample | Reaction | Result |
|---|---|---|
| Lard or cooking oil | | |
| Water | | |
| Nuts | | |
| Seeds | | |
| Bologna | | |
| Whole milk | | |
| Salad dressing | | |
| Cereal | | |
| Bread | | |
| Cheese | | |
| Peanut butter | | |

Name______________________

# PFC Sort

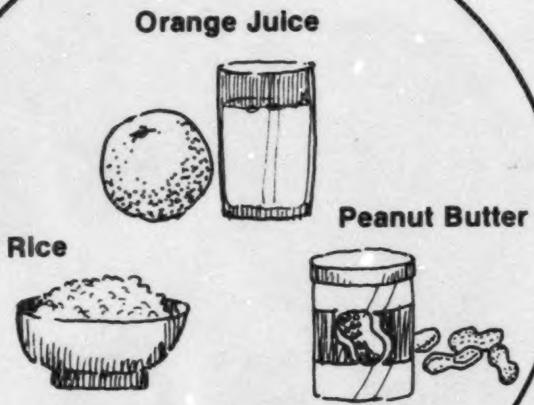
Sort the following foods into the correct categories and list them on chart below. Some may be used twice.

Butter
Cottage cheese
Grapes
Beef
Bread
Liver
Chicken
Cream
Artichoke
Apple
Navy beans
Mayonnaise
Oatmeal
Banana
Carrots
Avocado
Corn
Margarine
Nuts
Tortilla
Oil
Ice cream
Asparagus

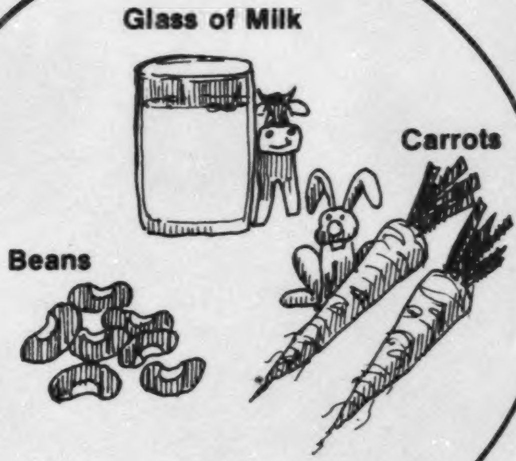
| Protein | Fat | Carbohydrate |
|---|---|---|
| 1. | 1. | 1. |
| 2. | 2. | 2. |
| 3. | 3. | 3. |
| 4. | 4. | 4. |
| 5. | 5. | 5. |
| 6. | 6. | 6. |
| | 7. | 7. |
| | 8. | 8. |
| | | 9. |
| | | 10. |
| | | 11. |

# Which Food Group Is Missing

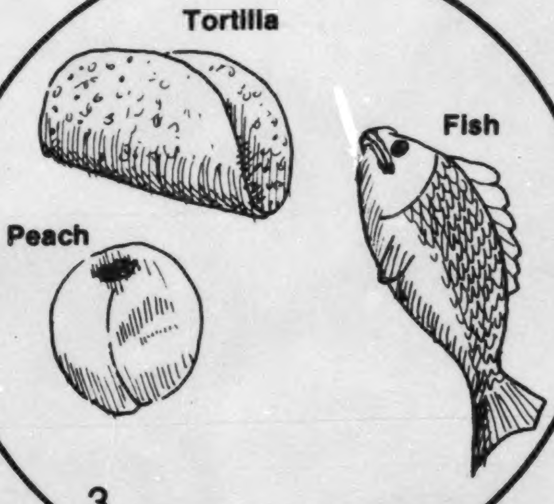
?


Orange Juice
Rice
Peanut Butter

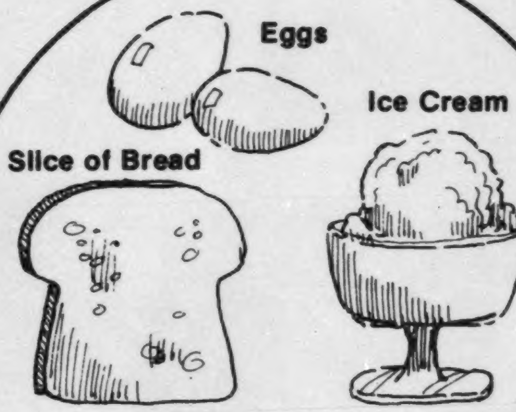
1. ______________________


Glass of Milk
Carrots
Beans

2. ______________________


Tortilla
Fish
Peach

3. ______________________


Eggs
Ice Cream
Slice of Bread

4. ______________________

Name ____________________

# Nutrient Check

Underline each food with green that contains carbohydrate as a major nutrient. Underline each food with red that contains protein as a major nutrient. Put a blue "X" by each food high in iron, and a yellow check by those foods containing calcium. Put a triangle next to each food that contains vitamin A or vitamin C. Foods may be used more than once.

bell pepper
carrot
tomato
brown rice
artichoke
chicken
green beans
kidney beans
yogurt
grapefruit
roast beef
orange
lemon
blue cheese
peanut butter
salmon
mustard greens
pumpkin

apricots
hard cooked egg
muffin
oatmeal
hamburger patty
whole wheat bread
cantaloupe
strawberries
cheddar cheese
cottage cheese
tortilla
spinach
pancakes
corn on the cob
trout
broccoli
watermelon
raisins

Which foods do not have any marks? ____________________

Explain why some foods are called "Extra Foods." ____________________

____________________________________________

____________________________________________

# Letter from Snack Food Committee

Dear Sixth Graders:

The Snack Food Committee at the junior high school you will be attending next year would like to get some ideas about the kinds of snack foods you would like available for sale at our school.

We also need to know your reasons for wanting the foods you suggested. Since we know everyone usually chooses foods that taste good, we would like you to give us any other reasons beside "it tastes good" for wanting these foods. Use the response form for the food wanted and one or two reasons why you want that food.

Because we cannot use the cafeteria, the foods you suggest should not be foods that need to be cooked at school.

Thanks for helping us. We are looking forward to having you at our great school next year.

Sincerely,

The Snack Food Committee

Name ______________________

# Response Form

To: Junior High Snack Food Committee

From: Sixth Grade Class

The following are the five snack foods we recommend along with our reasons for choosing them.

| Snack Foods | Reasons for Choosing |
|---|---|
| 1. ______________________ | 1. ______________________ |
| 2. ______________________ | 2. ______________________ |
| 3. ______________________ | 3. ______________________ |
| 4. ______________________ | 4. ______________________ |
| 5. ______________________ | 5. ______________________ |

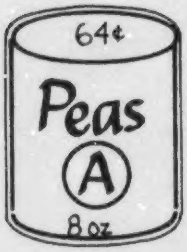
Name________________

# Snack Foods

| Food | Price | Ounces | i pe |
|---|---|---|---|
| Peanuts | 25¢ | 1.5 | |
| Candy bar | 25¢ | 1.05 | |
| Sunflower seeds | 25¢ | 1.2 | |
| Medium apple | 25¢ | 5.0 | |
| Box of raisins | 20¢ | 1.5 | |
| Grape juice (with vitamin C) | 20¢ | 5.5 | |
| Corn chips | 25¢ | 1.5 | |
| Chocolate sandwich cookies (6) | 25¢ | 1.45 | |

Name ______________________

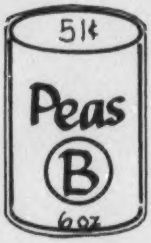
# Unit Pricing


64¢
Peas
A
8 oz

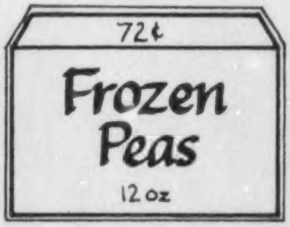
Unit price = 8¢ an ounce

Example:

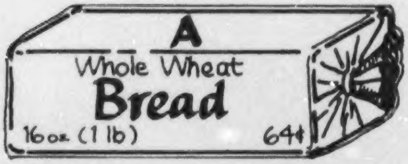
```
      8
8 ) 64
    64
     0
```


51¢
Peas
B
6 oz

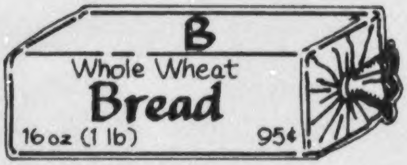
Unit price = ___ an ounce


72¢
Frozen Peas
12 oz

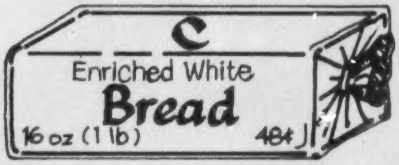
Unit price = ___ an ounce


A
Whole Wheat
Bread
16 oz. (1 lb)
64¢

Unit price = ___ an ounce


B
Whole Wheat
Bread
16 oz (1 lb)
95¢

Unit price = ___ an ounce


C
Enriched White
Bread
16 oz (1 lb)
48¢

Unit price = ___ an ounce

1. Which peas are the least expensive? ______________________
2. Which bread is the least expensive? ______________________
3. Which bread is the most expensive? ______________________
4. Which peas are the best buy? Why? ______________________
______________________________________________
5. Which bread is the best buy? Why? ______________________
______________________________________________
6. Is the least expensive food item always the best buy? ______________
7. Why is low-fat chocolate milk at 30 cents a carton a better buy than chocolate milk drink at 20 cents a carton? ______________________

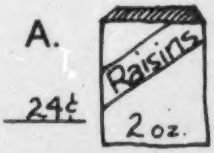
Name ______________________________

# Finding the Unit Price

**Remember : unit price = price ÷ weight**

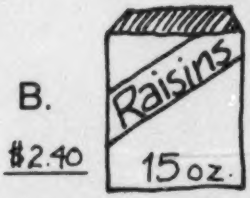
Unit price = amount per ounce

A.


24¢
Raisins
2 oz.

Unit price = 12¢ for one ounce

B.

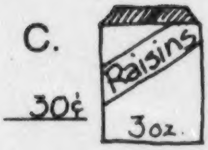

$2.40
Raisins
15 oz.

Unit price = ____ for one ounce

Example:

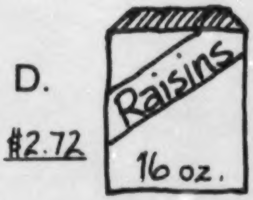
$$\begin{array}{r} 12 \\ 2\overline{)24} \\ \underline{2} \\ 04 \\ \underline{4} \\ 0 \end{array}$$

C.


30¢
Raisins
3 oz.

Unit price = ____ for one ounce

D.


$2.72
Raisins
16 oz.

Unit price = ____ for one ounce

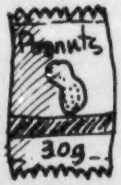
Which box of raisins is the best buy? ______________________________

Which box of raisins is the most expensive to buy? ______________________

How much do you save between the least and most expensive buy? __________

Unit price = amount per gram

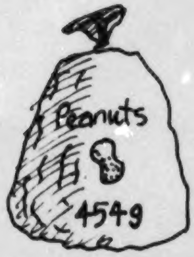
A.


Peanuts
30g

30¢

Unit price = _____ for one gram

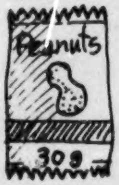
B.


Peanuts
454g

$1.37

Unit price = _____ for one gram

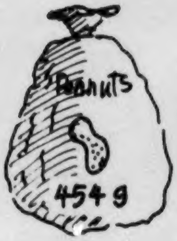
C.


Peanuts
30g

60¢

Unit price = _____ for one gram

D.


Peanuts
454g

$1.50

Unit price = _____ for one gram

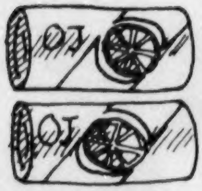
Which bag of peanuts is the best buy? _______________

Which bag of peanuts is the most expensive to buy? _______________

How much do you save between the least and most expensive buy? _______________

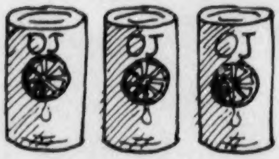
Name ______________________

# Unit Pricing in the Store



Frozen Juice

12.1¢ per pint



Canned Juice

10.8¢ per pint

Powder Mix
Powder Mix

Powdered Mix

14.4¢ per pint

Orange Drink
Orange Drink
Orange Drink

Canned Juice Drink

7.9¢ per pint

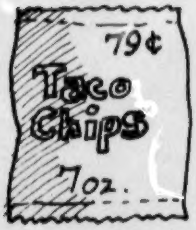
Which juice is the least expensive? ______________________

Which juice is the most expensive? ______________________

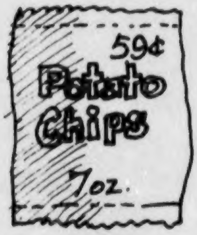
Which juice is the best buy? Why? ______________________

Is the cheapest juice always the best buy? Why? ______________________

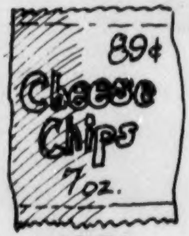
Why is frozen juice a better buy than canned juice drink? ______________________


79¢
Taco Chips
7oz.

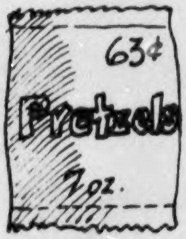
11.2¢
per ounce


59¢
Potato Chips
7oz.

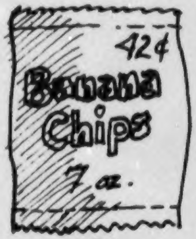
8.2¢
per ounce


89¢
Cheese Chips
7oz.

12.7¢
per ounce


63¢
Pretzels
7oz.

9¢
per ounce


42¢
Banana Chips
7 oz.

6¢
per ounce

Which snack is the least expensive? ______________________

Which snack is the most expensive? ______________________

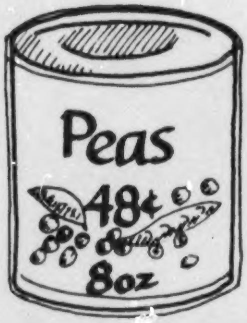
Which snack is the best to buy? Why? ______________________

Name______________________

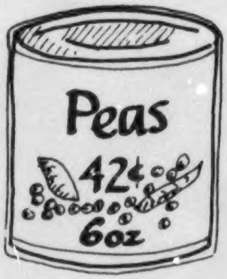
# Which Is a Better Buy?

Circle the correct answer and tell why it is correct.

A.



OR B.



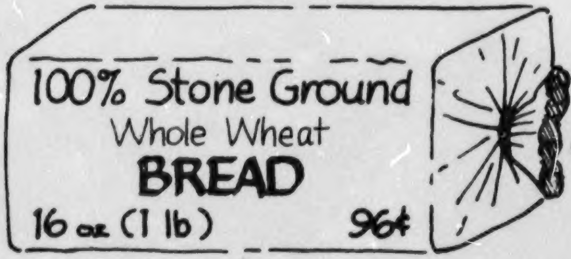
Which is a better buy? A. The peas for 48¢

B. The peas for 42¢

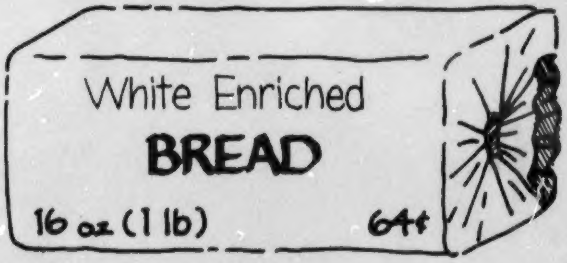
Why? ______________________________________________

---

A.


100% Stone Ground
Whole Wheat
BREAD
16 oz (1 lb)
96¢

OR B.

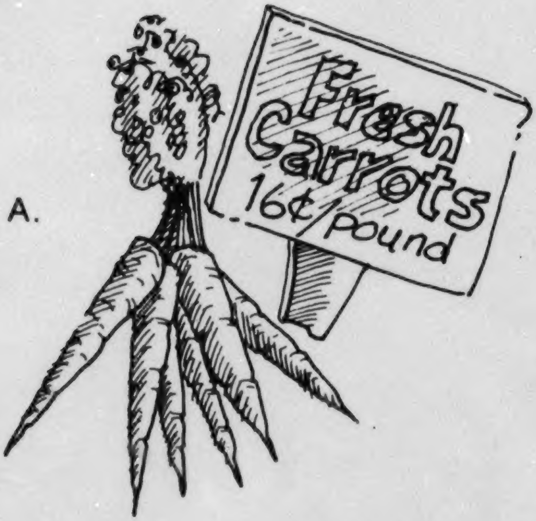

White Enriched
BREAD
16 oz (1 lb)
64¢

Which is a better buy? A. The bread for 96¢

B. The bread for 64¢

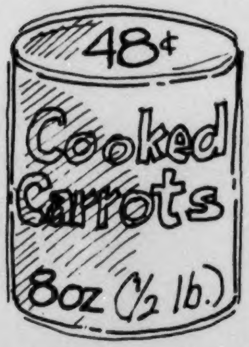
Why? ______________________________________________

A.


Fresh Carrots
16¢/pound

OR

B.


48¢
Cooked Carrots
8oz (1/2 lb.)

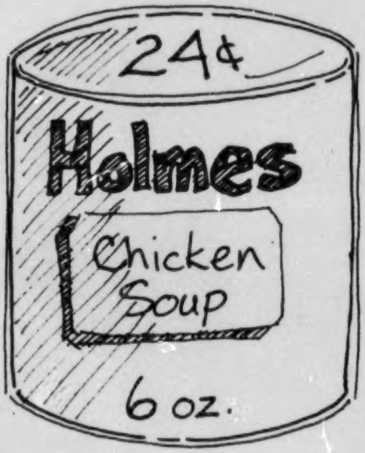
Which is a better buy? A. The fresh carrots

B. The canned carrots

Why? ____________________

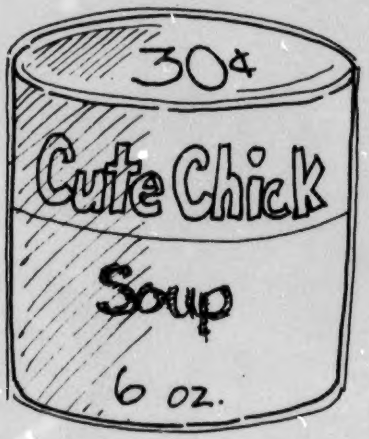
---

A.


24¢
Holmes
Chicken Soup
6 oz.

OR

B.


30¢
Cute Chick
Soup
6 oz.

Which is a better buy? A. Holmes Chicken Soup

B. Cute Chick Soup

Why? ____________________

Name

# Appeals of Advertising*

| Appeals of advertising | Food products using appeal |
|---|---|
| 1. Appearance—Ad catches your eye because of its color or design, or it makes people happy. | |
| 2. Ease of Preparation—Ad shows how easy it is to use the product. | |
| 3. Economy—Ad tells how the product will save money or makes a special offer. | |
| 4. Health/Nutrition—Ad tells how good the product is for your health. | |
| 5. Information—Ad gives details about the product, including nutritional value such as vitamins, etc. | |
| 6. Size—Ad and words are large in size and easy to read. | |

One of my values about the appeal of advertising is ________________.

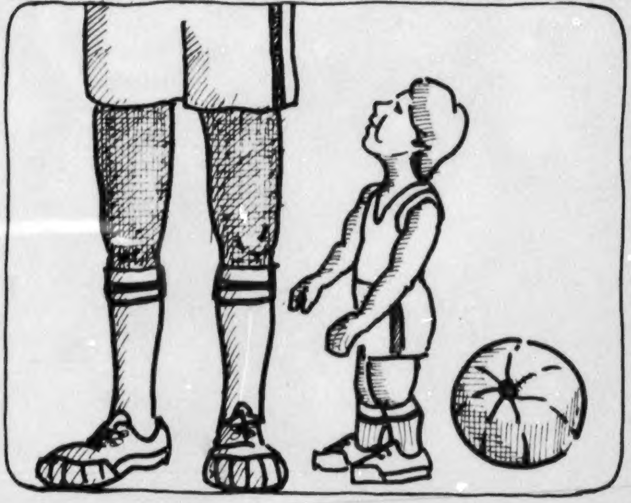
---

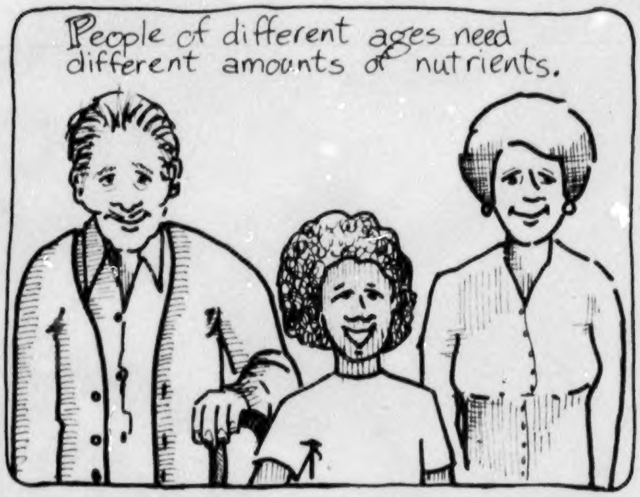
*Adapted from *FOOD . . . Your Choice.* (Rosemont, IL: National Dairy Council 1977) Unit One, Activity 3.

# Needs

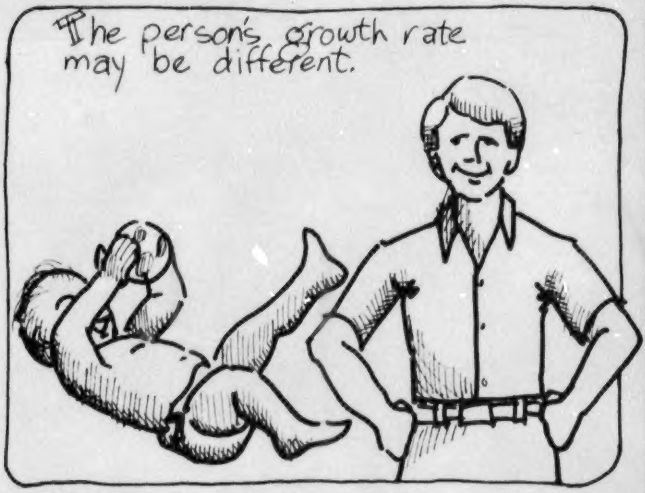
EVERYONE NEEDS THE SAME NUTRIENTS. HOWEVER, THE AMOUNTS NEEDED MAY BE DIFFERENT FOR THE FOLLOWING REASONS....

The size of a person and their bone structure determines the amount of nutrients needed.

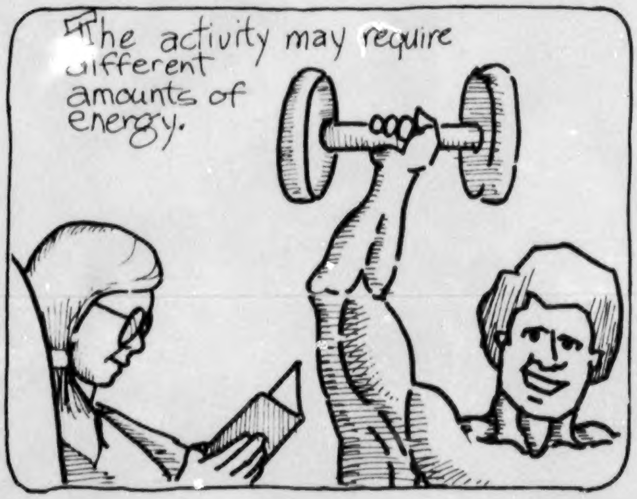




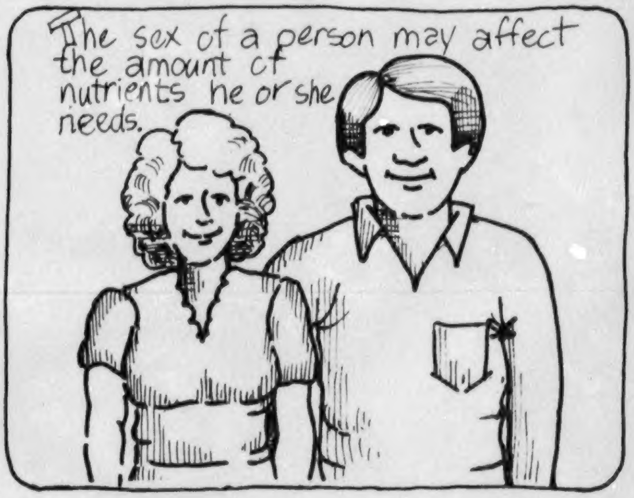
People of different ages need different amounts of nutrients.



The person's growth rate may be different.



The activity may require different amounts of energy.



The sex of a person may affect the amount of nutrients he or she needs.

Name____________________

# What Are My Eating Habits?

| | Me | Friend |
|---|---|---|
| Breakfast | | |
| Lunch | | |
| Dinner | | |
| Snack | | |

Compare what you ate with what your friend ate.

Did you eat more, less, or the same as your friend ate?

Why?

| Me | Friend |
|---|---|
| Check the box that best fits you. | Check the box that best fits your friend. |
| Size: Tall ☐<br>Medium ☐<br>Small ☐ | Size: Tall ☐<br>Medium ☐<br>Small ☐ |
| Build: Thin ☐<br>Average ☐<br>Heavy ☐ | Build: Thin ☐<br>Average ☐<br>Heavy ☐ |
| Kinds of activities I enjoy: | Kinds of activities my friend enjoys: |
| I would rather:<br>Play outside ☐<br>Watch TV ☐ | My friend would rather:<br>Play outside ☐<br>Watch TV ☐ |
| Growth: Fast ☐<br>Medium ☐<br>Slow ☐ | Growth: Fast ☐<br>Medium ☐<br>Slow ☐ |

What are three things that make a difference in the amount you eat?

1.
2.
3.

Name ____________________

# Food Needs

Circle the person who needs more food and tell why.

1. 65-year-old man 13-year-old girl

Why? ______________________________

2. Teenage boy Small child

Why? ______________________________

3. Professional football player Teacher

Why? ______________________________

4. Attorney Construction worker

Why? ______________________________

5. TV announcer Professional dancer

Why? ______________________________

6. 19-year old male 25-year-old female

Why? ______________________________

Name________________________

# Research Questions

1. Locate your country on the world map. Label your country and its surrounding countries, mountains, and oceans.
2. What is the climate like and what are the food products raised in your country? How do they affect the country's choice of food? What does the bread consist of that is eaten in this country?
3. What is the recipe for your bread and how is it prepared?
4. What is the major grain used in the bread. Does this grain have nutrients other than carbohydrates and B vitamins? If this bread is made commercially as well as at home, does the nutrient content vary substantially?
5. Is the bread historically and presently associated with any ceremonies, holidays, or traditions? Describe these occasions.
6. What foods are eaten with your bread (spreads, soups, stews, and fillings)? Write a recipe for at least one food which is eaten with your bread and include it in a menu which is typical of your country. What food groups are represented in the menu?

Name ____________________

# Evaluation Form

Name of country: ________________________________________

Names of group participants: ______________ ______________

______________ ______________

______________ ______________

Check the appropriate box.

Yes No

☐ ☐ 1. From the group's directions, can you locate this country on the map?

Yes No

☐ ☐ 2. From their report can you tell why this food is eaten in their country? (Climate and agriculture determine choice availability.)

Yes No

☐ ☐ 3. Did you understand how the bread was made? (ingredients and/or method)

Yes No

☐ ☐ 4. Did the group tell you the nutrient content of the bread?

Yes No

☐ ☐ 5. Did the group mention the use of the bread in ceremonies or holiday celebrations? (feasts, traditions) Name one ______

________________________________________

Yes No

☐ ☐ 6. Did they name a food eaten with this bread? What is it?__

________________________________________

7. Name one food and explain how it is served with the bread.

________________________________________

________________________________________

Answer the following questions:

8. What new information did you learn from this group?

9. Are you interested in trying any of the foods mentioned? Which food?

Name________________________

# Breads from Around the World

*Directions:* Match the country in column 1 to the appropriate cultural bread in column 2.

1. Mexico
2. American Indian
3. India
4. Israel
5. Ireland
6. England
7. China
8. Russia
9. Scotland
10. Africa
11. Sweden
12. France
13. Italy
14. Middle East
15. Portugal

A. Limpa
B. Grissini
C. Scones
D. Kulich
E. Navajo fry bread
F. Challah
G. Irish soda bread
H. Pain ordinaire
I. Chapattis
J. Bow (steamed buns)
K. Tortilla
L. Pita
M. Maandaxi
N. Crumpets
O. Portuguese bread

Name________________________

# Ambassador Cards

I am the ambassador from Europe. We have 12 percent of the world's population or about 476 million people, two-thirds of whom live in the cities.

Europe has 4 percent of the land area, one-half of which is good for farming, allowing about four-fifths of an acre of farmland per person.

I am the ambassador from Asia. We have 57 percent of the world's population or about 2 billion, 287 million people, one-fourth of whom live in the cities.

Asia has 20 percent of the land area, one-third of which is good for farming, allowing about one-half of an acre of farmland per person.

I am the ambassador from Africa. We have 10 percent of the world's population or about 413 million people, one-fifth of whom live in the cities.

Africa has 22 percent of the land area, one-third of which is good for farming, allowing about one and two-thirds acres of farmland per person.

I am the ambassador from North America. We have 6 percent of the world's population or about 239 million people, three-fourths of whom live in the cities.

North America has 16 percent of the land area, one-fourth of which is good for farming, allowing about two and one-third acres of farmland per person.

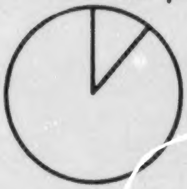
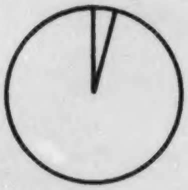
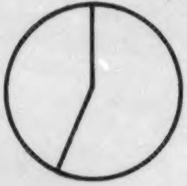
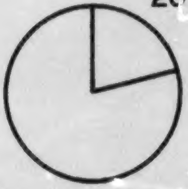
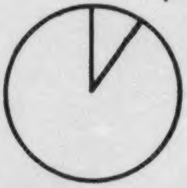
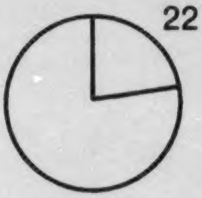
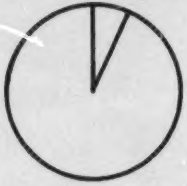
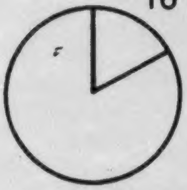
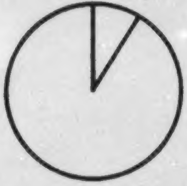
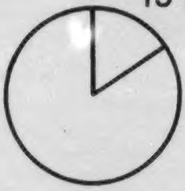
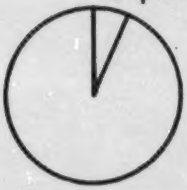
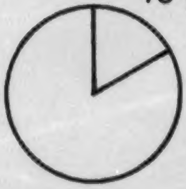
I am the ambassador from Latin America. We have 8 percent of the world's population or about 326 million people, one-half of whom live in the cities.

Latin America has 15 percent of the land area, one-third of which is good for farming, allowing about one acre of farmland per person.

I am the ambassador from the USSR. We have 6 percent of the world's population or about 257 million people, two-thirds of whom live in the cities.

The USSR has 16 percent of the land area, one-fourth of which is good for farming, allowing about two and one-third acres of farmland per person.

# Population/Land Pie Graph

| | population | land |
|---|---|---|
| **Europe** | 12 percent<br> | 4 percent<br> |
| **Asia** | 57 percent<br> | 20 percent<br> |
| **Africa** | 10 percent<br> | 22 percent<br> |
| **North America** | 6 percent<br> | 16 percent<br> |
| **Latin American** | 8 percent<br> | 15 percent<br> |
| **USSR** | 6 percent<br> | 16 percent<br> |

Name________________________

# Garden Pests Vocabulary

Insecticide—A substance used or prepared for killing insects.

Resistance—The act of resisting. To strive against or become immune to.

Persistent—Enduring, permanent, continuous. Lasting or enduring state.

Wildlife—Wild animals, trees, and plants collectively.

Aphids—Any of a family of numerous, small, juice-sucking insects, injurious to plants; also called plant lice.

Species— A category of animals or plants.

Cannibal—An animal that devours members of its own species.

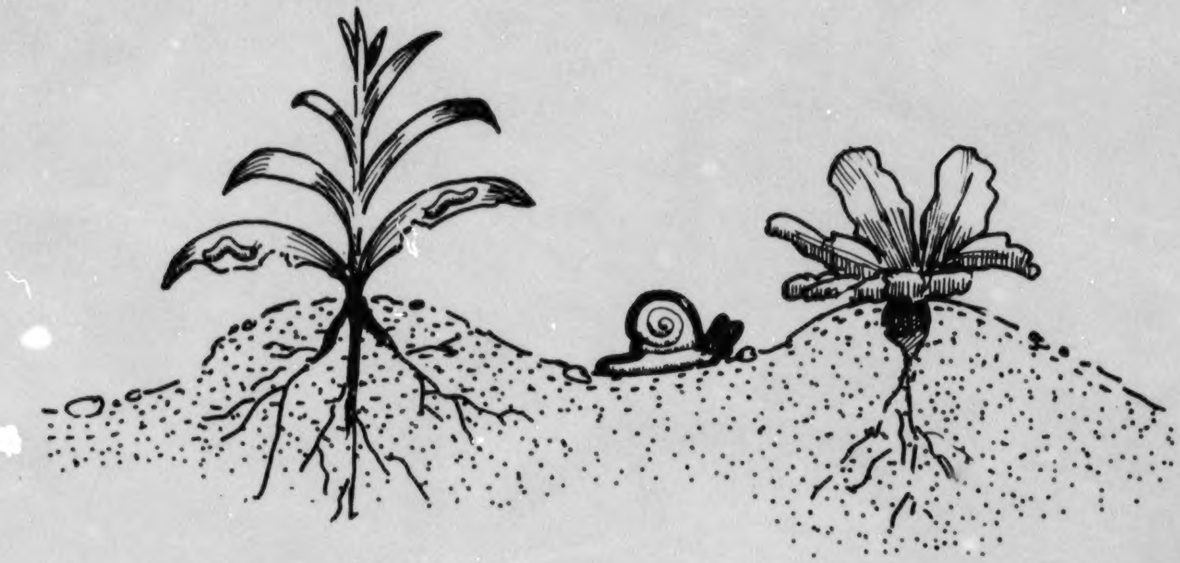
Yield—To give forth by a natural process, or as a result of labor or cultivation.

Soil—The loose top layer of the earth's surface.

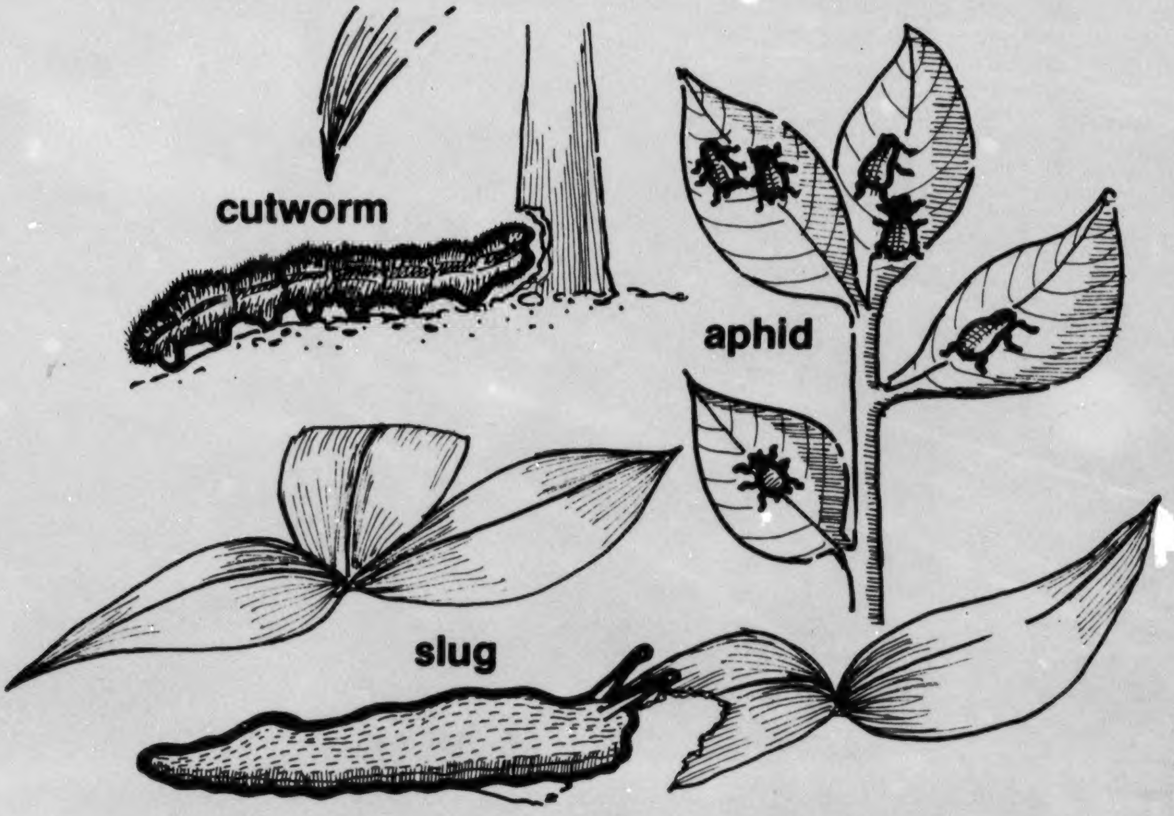
Fertilizer—Any of a large number of natural and synthetic materials, including manure, nitrogen, phosphorus, and potassium compounds, spread or worked into soil to increase its fertility.

# Pests in the Garden

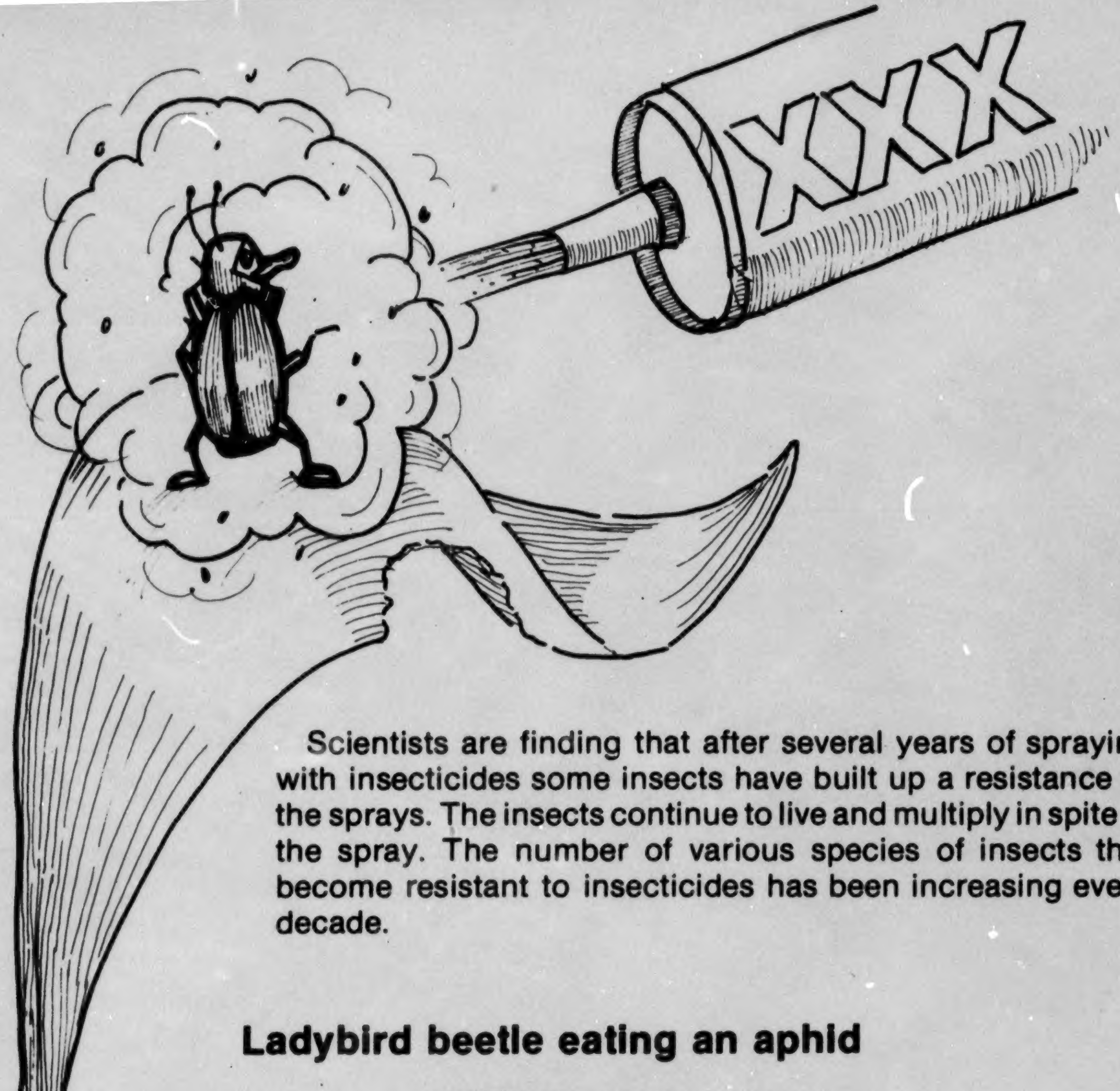
I-87



Many kinds of insects feed on plants used for food. They chew on the leaves of plants or suck the sap from the leaves and soft twigs of plants. Snails and slugs are not insects but some do eat garden plants. When garden pests feast on food plants, the plants do not produce as much food.

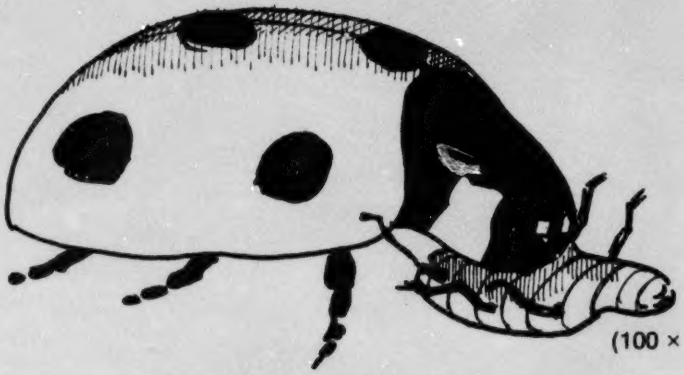


These pests can also affect the quality of food crops. How would you like to share your salad greens with one of them?



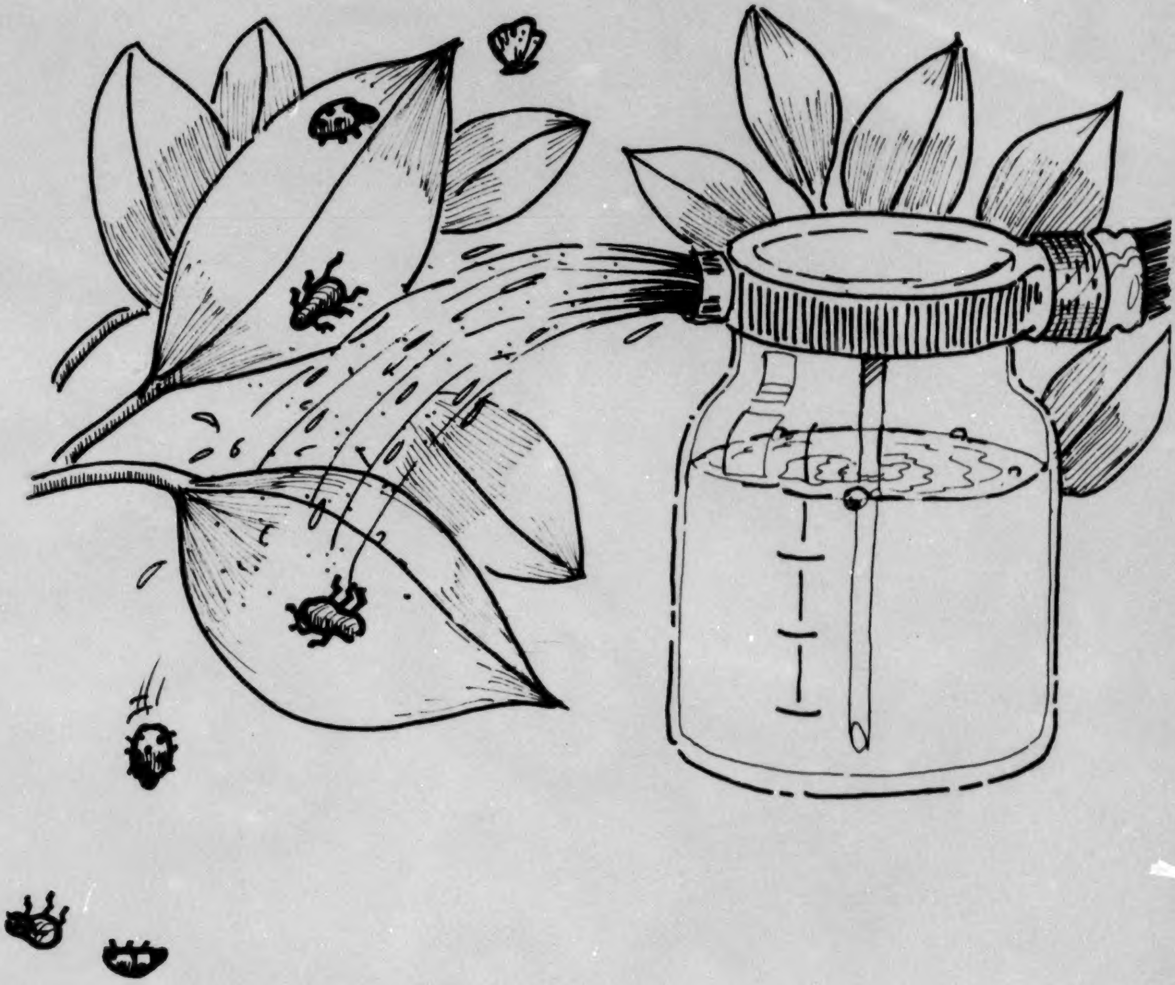
Scientists are finding that after several years of spraying with insecticides some insects have built up a resistance to the sprays. The insects continue to live and multiply in spite of the spray. The number of various species of insects that become resistant to insecticides has been increasing every decade.

**Ladybird beetle eating an aphid**



(100 × actual size)

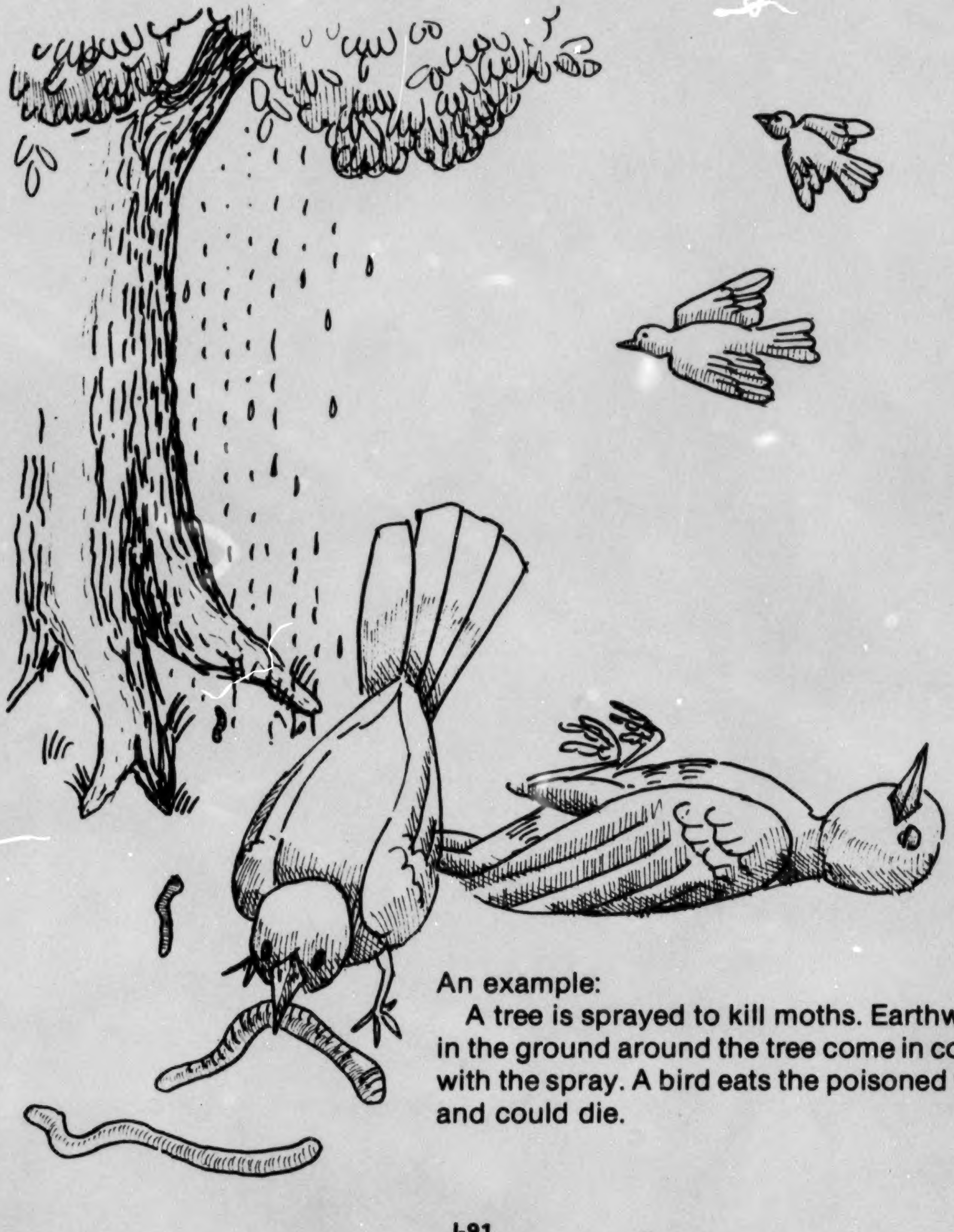
There are many insects that feed on other insects. If these insect eaters eat insects that eat plants in your garden, they are, indeed, your friends.



You may kill some of your best insect friends if you spray with a chemical insecticide. Many insecticides kill not only the bad insects but also the "good" bugs that work for you.

Another problem with *some* insecticides is that they are persistent. The chemicals do not break down easily. It takes many years before they become harmless in soil or water.

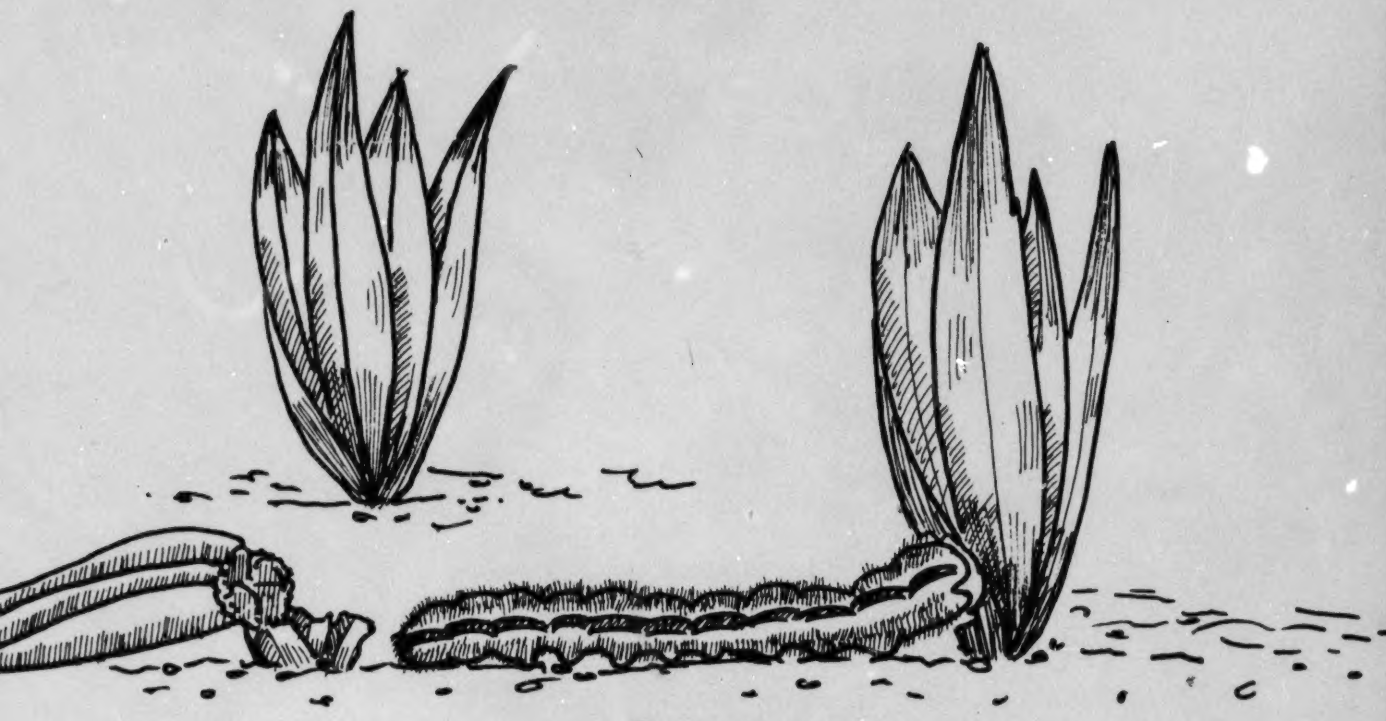
The persistent insecticides can continue to work and travel long after they have been sprayed on plants. They can kill not only the insects but also other wildlife that get their food from the sprayed land.



An example:

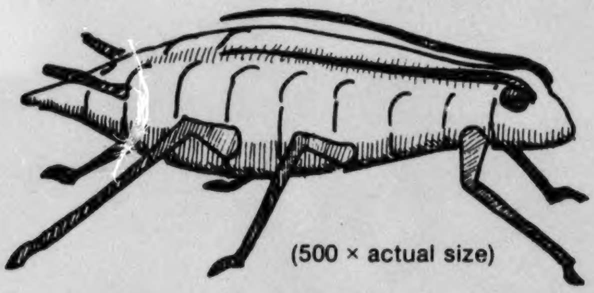
A tree is sprayed to kill moths. Earthworms in the ground around the tree come in contact with the spray. A bird eats the poisoned worm and could die.

# Meet some bugs that damage plants.



## Cutworm

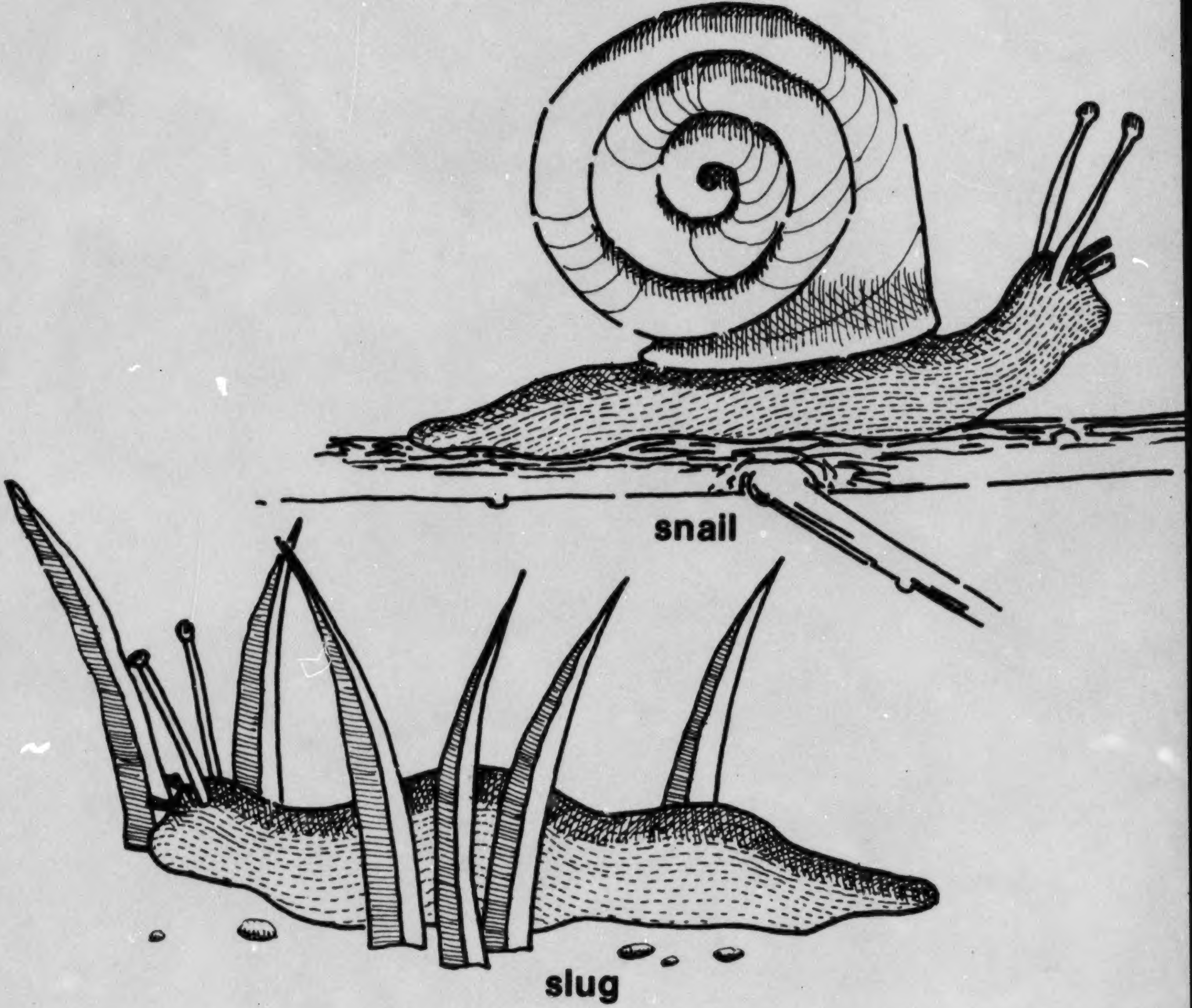
This is one of the worst types of insect pests for gardeners. Usually cutworms feed at night on the roots and tender shoots of young plants. Often they cut off the stems of plants at ground level. This means less food for the farmer to sell.



(500 × actual size)

## Aphids

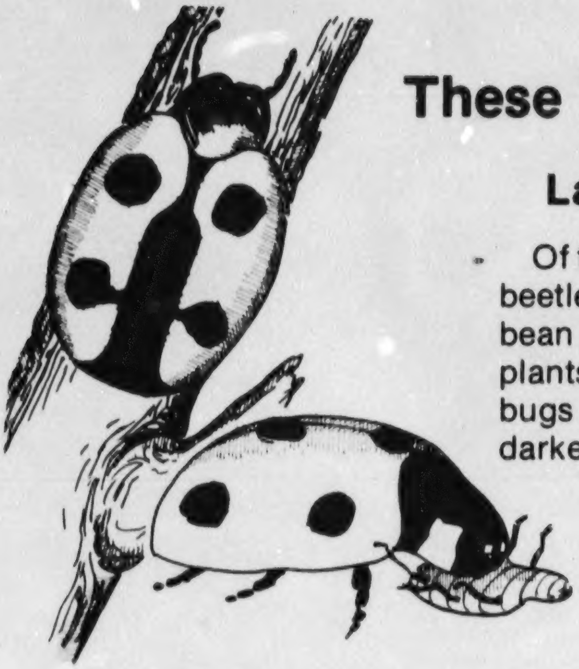
Aphids are also called plant lice. They usually appear in large numbers on plants. There are many species of aphids. They feed by sucking the juices from leaves and stems of plants. The plants can die if the leaves can no longer make food.



## Slugs and Snails

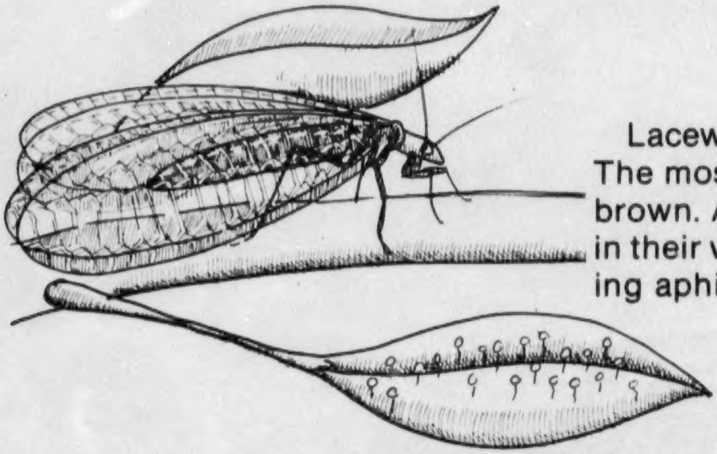
These creatures have soft bodies and usually live in damp, shady places—under stones and in thick ground cover such as ivy. They usually come out at night or on cool, damp days to feed. They chew stems, roots, and young seedlings and make ragged holes in leaves.

# These bugs help in the garden.



## Ladybird Beetles (Ladybugs)

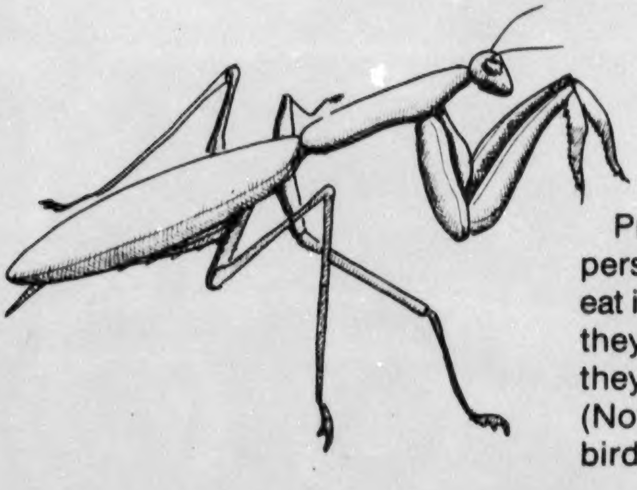
Of the more than 300 species in the ladybird beetle family, only two eat plants. One attacks bean plants and the other destroys squash plants. The brightly colored red or yellow bugs with black dots eat mostly aphids. The darker ones eat insects like spider mites.



eggs on leaf

## Lacewings

Lacewings are beautiful and helpful insects. The most common are green. Some are also brown. All have golden eyes and many veins in their wings. They eat many insects, including aphids.

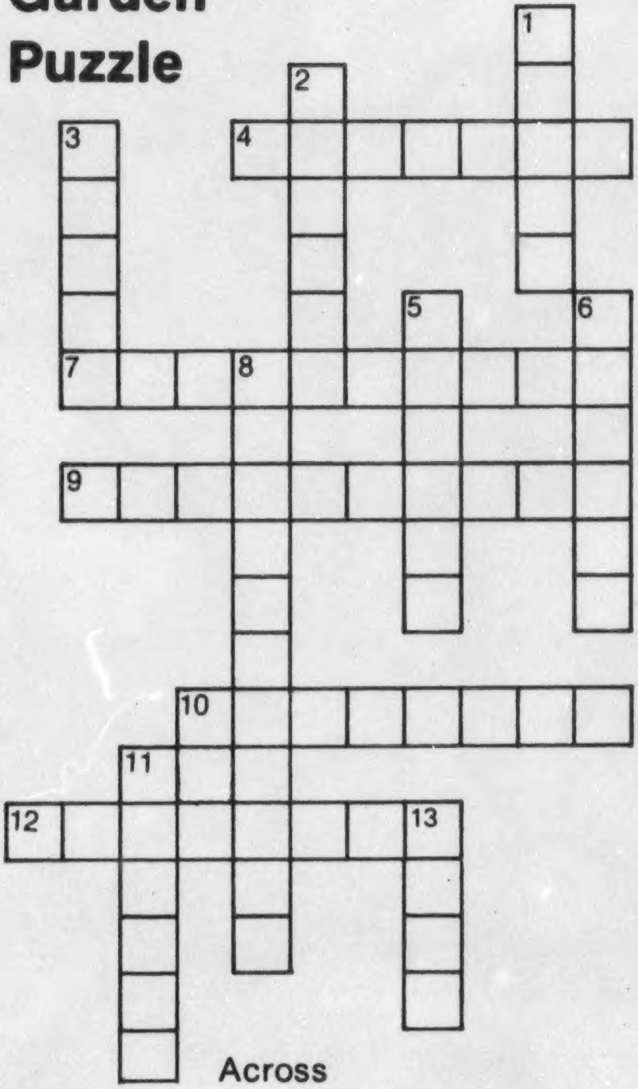


## Praying Mantis

Praying mantises are related to grasshoppers and crickets. They are cannibals; they eat insects, including other mantises. Although they eat helpful insects, such as ladybugs, they do more good than harm in the garden. (Note: Praying mantis egg cases and ladybird beetles are available at local nurseries.)

Name________________________

# Pests in the Garden Crossword Puzzle



Down

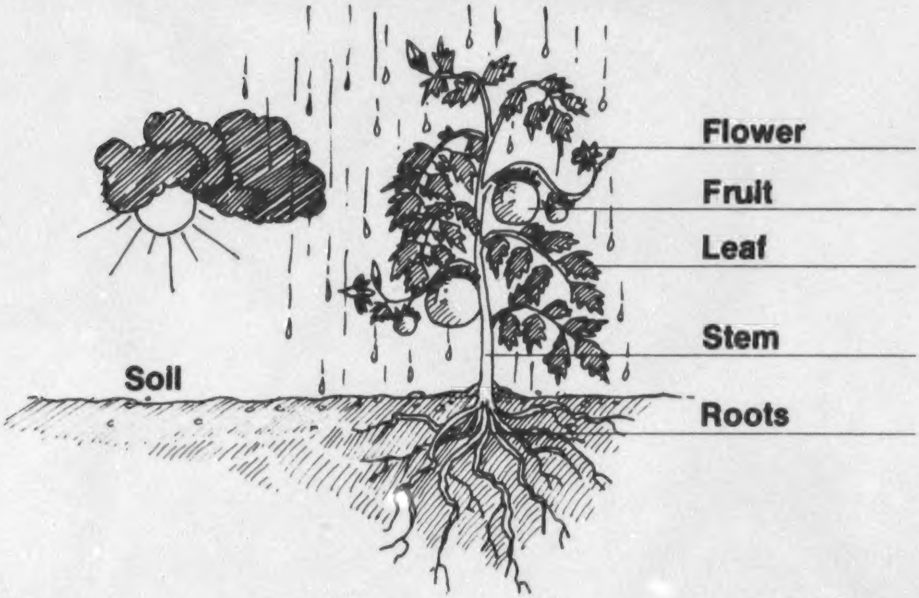
1. ______ is to give forth as a result of labor or cultivation.
2. ______ are small juice-sucking insects.
3. Light, soil, ______ and pests all affect crop yield.
5. The praying ______ is a cannibal.
6. The ladybug ______ eats aphids.
8. An ______ is a substance to kill insects.
11. Cut worms, slugs, and ______ feed at night.
13. The beautiful ______ wing is a helpful insect and often is green.

Across

4. The category of animals or plants is called ______ .
7. Many insects build up ______ to or become immune to insecticides.
9. Some insecticides are enduring, or ______ .
10. Wild animals, trees, and plants together are called ______ .
12. An animal that eats members of its own species is called a ______.

Name______________________________

# Similarities in Plants



All plants are alike in some ways. They are all living things which must have food, water, light, and air. All plants need these things to live and grow.

Most plants have roots, stems, and leaves. The roots of most plants go down into the ground. They get food and water from the soil to keep the plant alive. Roots also spread out in the ground to keep the plant from blowing away or falling over. The stems of plants usually grow upward. They hold the plant up so that the leaves can get sunlight. The stems also carry soil water from the roots to the other parts of the plant. Green leaves manufacture food for the plant. This process is called photosynthesis. Plants can store food in their leaves, stems, roots, and flowers. The flower serves to attract insects for pollination. The flower is where the seed is contained or developed.

Name five ways in which plants are alike.

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

# Plant Growth Chart

Name ______________________

| | Leaf color | Number of leaves | Plant height | Plant condition | Soil condition | Additional observations |
|---|---|---|---|---|---|---|
| Sample 1. | | | | | | |
| Sample 2. | | | | | | |
| Sample 3. | | | | | | |
| Sample 4. | | | | | | |
| Sample 5. | | | | | | |
| Sample 6. | | | | | | |
| Sample 7. | | | | | | |

Name________________________

# Vocabulary Match-Up

Match the words listed below with the correct definition. Write the letter of the correct definition in the space provided to the left of the word.

____ 1. Insecticide

____ 2. Resistance

____ 3. Persistent

____ 4. Wildlife

____ 5. Aphids

____ 6. Species

____ 7. Cannibal

____ 8. Yield

a. To give forth by a natural process, or as a result of labor or cultivation

b. An animal that devours members of its own species

c. A substance used or prepared to kill insects

d. A category of plants or animals

e. Enduring or permanent

f. Wild animals, plants, trees

g. Small juice-sucking insects

h. The act of resisting; to become immune to

# Food Scientist Fact Sheet

Food scientists develop and process foods. They investigate the chemical, physical, and biological nature of food and apply this knowledge to processing, preserving, packaging, distributing, and storing an adequate, nutritious, wholesome, and economical food supply. Food scientists may work in research and development, in quality assurance laboratories, in production or processing areas of food plants, teach, or do basic research in colleges and universities.

Food scientists in research study the structure and composition of food and the changes it undergoes in storage and processing. For example, they may develop new sources of proteins, study the effects of processing on microorganisms, or search for factors that affect the flavor, texture, or appearance of foods. They also create new foods and develop new processing methods. They may seek to improve existing foods by making them more nutritious and enhancing their flavor, color, and texture.

Food scientists ensure that each product will retain its characteristics and nutritive value during storage. They also conduct chemical and microbiological tests to make sure that products meet industry and government standards, and they may determine the nutritive contents of products in order to comply with federal nutritional labeling requirements.

In quality control laboratories, food scientists check raw ingredients for freshness, maturity, or suitability for processing. They may inspect processing line operations to ensure conformance with government and industry standards. They are also involved in developing and improving packaging and storage methods.

Food scientists in production prepare production specifications, schedule processing operations, maintain proper temperature and humidity in storage areas, and supervise sanitation operations, including the efficient and economical disposal of wastes. They advise management on the purchase of equipment and recommend new sources of materials. They may also work in market research, advertising, or technical sales.

A bachelor's degree with a major in food science, or in one of the physical or life sciences such as chemistry and biology, is the usual minimum requirement for beginning jobs in food science. An advanced degree is necessary for many jobs, particularly research and college teaching and for some management level jobs in industry.

Name____________________

# Nutrition in the Shopping Cart*

When Don got home from school, he went straight to his room. The rule was that he had to do his homework before anything else. As he puzzled over his math, he could hear his father in the kitchen. Pots and pans clanged and the sound of something frying sizzled in the background.

Things sure had changed since his mom had returned to college. Three nights a week, his dad took over the cooking chores. At first, Don was a bit worried that they'd all starve. His dad had never taken the time to cook before. What a surprise it was when his dad proved he was a great cook!

Before long, a wonderful smell began to float into Don's room. The boy's stomach growled. His dad was making spaghetti and all Don could think about was food. He finally finished his math and went into the kitchen.

The rich red sauce was bubbling on the stove. Another large pot filled with noodles was boiling briskly. Don asked if there was anything he could do to help. As his father was making the salad, he pointed at a loaf of Italian bread. Don sliced the bread and spread butter on each slice. Then he sprinkled cheese and garlic on each slice and wrapped the loaf in foil. He popped it into the oven to heat it.

When Don's mother came in a little later, the three of them sat down to eat. Don couldn't believe it. The food actually tasted even better than it smelled. The spaghetti, salad, and bread really hit the spot.

■ ■ ■

Barb's parents are divorced and her mom is at work when she gets home from school. Because of this, Barb often has to shop for and make her own meals. Sometimes Barb likes to make a big dinner with all the trimmings. She's becoming quite a good cook. But at times, she doesn't feel like taking so much time. She has other things to do.

One afternoon, Barb stayed after school to work on decorations for a dance. When she got home, she noticed she would barely have time to eat and get ready for the dance.

She took a can of spaghetti and a can of green beans from the shelf. It didn't take her long to heat them on the stove. When she finished her meal, she had plenty of time to get ready for the dance.

■ ■ ■

Mr. and Mrs. Green were going out for the evening. Rick Green was going to sit for his little sister, Lori. Since his parents would be eating out, Rick would fix dinner.

He decided to heat some frozen dinners. He liked them because they took very little of his time. All he had to do was take them out of the box and put them into the oven. They took about 40 minutes to heat, and he could watch TV while Lori played with her toys.

When the time was up, Rick carefully took the dinners from the oven. He had chosen spaghetti dinners because spaghetti was Lori's favorite food. Along with the spaghetti there were peas and vanilla pudding in the dinner. Lori liked having her food in the little sections on the tray. Cleaning up was what Rick liked best about frozen dinners. It took four steps to throw the empty trays into the garbage.

■ ■

In each of the three stories there is something in common. Everyone has chosen to eat spaghetti. But in each case, the spaghetti has been prepared in a different way. Barb's spaghetti was canned; Rick's was frozen; Don's was made from canned sauce, fresh ground meat, and packaged noodles.

If you had your choice, which spaghetti would you choose?

Which spaghetti would be hardest to make? Which would be the easiest?

Which spaghetti would cost more to make? Maybe your class can check different prices and figure this out.

If you have tasted spaghetti these three ways, which one tasted the best?

Are there any other ways you can make spaghetti? How do these taste? How much do they cost? How easy are they to make?

---

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Which of the spaghettis was most nutritious?

Like the spaghetti, it is possible to buy many foods in different forms. Can you think of some foods that you buy in the following forms?

Fresh
Frozen
Canned
Dried
Packaged

■ ■ ■

Getting the right nutrients from the foods you eat is really important. Do you ever go shopping with your parents? How do they check to see you're getting the foods you need? What do they look for? Is fresh food the best? How about canned or frozen? Can they be that much different nutritionally?

■ ■ ■

Sanford A. Miller of the United States Food and Drug Administration writes, "Fresh foods that are canned or frozen are often close in nutrition to fresh. They are important in helping us meet our daily needs year-round. This is very important for areas that can't grow foods during certain seasons."

■ ■ ■

There are many things to consider when buying foods. One is the nutritional quality of the food. The label on the package usually tells what is in it. Chances are your parents look at the top of the can or box, too, so they can see how much the food costs.

Convenience foods are those made ahead of time, like frozen dinners or canned stew. They tend to cost more than foods made from scratch. With everyone complaining about money lately, it's surprising that people are willing to spend extra money for convenience. Or is it?

If you look at how to make homemade mashed potatoes, you might get a better picture. First you have to peel the potatoes, then boil them. When the cooking has softened them, you have to mash them. Many people have switched to using dried potato flakes. They feel the time saved is really worth the extra cost.

That brings up another thing people think about when they buy foods. How easy are they to prepare? Sometimes there isn't a lot of time to make a meal. Buying foods that are already prepared (frozen or canned) saves some important minutes. As long as these foods meet a person's nutritional needs, they are good. For many people, they are worth a few cents more.

When Don's father made the spaghetti, Don couldn't believe it. The food actually tasted even better than it smelled. Many people claim that nothing tastes as good as homemade. Perhaps they're right about some foods. But many of the mixes, canned, and frozen foods taste very good. Some people don't know how to cook. For them, mixes or canned or frozen foods taste wonderful—better than anything they could burn.

■ ■ ■

Do you ever run to the store for your parents? How do you choose a certain brand? Do you try to buy the kind your parents usually pick? Sometime, ask them why that is the brand they like.

Food is important. When you shop for food, it's nice to know there are so many things to choose from. Think about your favorite food. Which way does it taste best to you? Do you know what brand is easiest to prepare? Which costs the least? Which is the most nutritious?

Chances are you won't be doing all the shopping for a number of years. But someday it may be something you do often. The next time you shop with adults, pay attention to the choices they make. Watch what other people put in their carts, too. See if they look at the label, or at the price. Do they ever buy something only because it is on sale? What about if there is a special offer or something free in the box?

Look at certain brands when you shop. Compare prices, nutritional values, and how easily each can be made. Think about what foods you would choose if you were the shopper. That day may be soon.

**For More Information**

Consumer Information Center
Pueblo, CO 81009
Pamphlets: No. 553G, *Read the Label, Set a Better Table;* No. 550G, *Consumer's Guide for Food Labels;* No. 554G, *Your Money's Worth in Foods;* single copy of each free. Please mark FREE on the envelope.

Name________________________

# Dining in A.D. 2001

THE YEAR IS 2001, and it's dinner time at the Smiths'. The menu: pot roast, peas, and potatoes, with wine for Mr. and Mrs. Smith, and milk for Junior.

Nothing unusual in this, except that the roast isn't meat; it's made from high-protein soybean meal almost indistinguishable in taste from the real thing. Even though the season is midwinter, with snow on the ground, the Smiths' vegetables are locally grown and fresh; they come from a nearby "factory"—a huge, automated greenhouse where light, temperature and nutrient-bearing water sprays are computer-controlled for growing produce year-round. The wine, round and mellow, has never seen a grape; it's manufactured from whey, a dairy by-product formerly discarded by cheese makers. Finally, Junior's milk has been drawn from the latest biological marvel, a "polyunsaturated cow"; although it tastes like old-fashioned milk, it has much lower quantities of the saturated fats people have been trying to avoid.

Sound far out? Not at all. Every one of these "future foods" is already here. In fact, total sales for fabricated foods should reach $11 billion in 1980. And more exotic developments are on the comestibles horizon. "We'll be seeing many more changes in the way food is produced, processed, and sold," says Howard Mattson of Chicago's Institute of Food Technologists. "But the basic shape of things we now have on the table won't change. We won't be downing little pink pills and calling it supper."

What does lie ahead? More meatless meats, for one thing. Already off and running are such fabricated foods as "ham," "bacon," "steak," and "sausages," all made from soybeans. Jean Mayer, former professor of nutrition at Harvard University and current president of Tufts University, estimates that direct meat substitutes, or extenders, which can be added to real meats like hamburger, will compose about ten percent of total meat consumed in the United States by 1985, with a much higher level reached in the early 21st century.

Why the dramatic increase? Economy, for one thing. It is cheaper—and more ecologically sound—to utilize the high-protein content of a pound of soybeans directly than to cycle it first through cattle, which need up to about nine pounds of vegetable-protein feed to produce a single pound of meat. It is probably more healthful, too. Vegetable products in the right combination contain all the proteins, carbohydrates, fats, vitamins and trace elements needed for good health, without the potentially harmful saturated fats and cholesterol contained in animal products.*

What about taste? So far, at least, no one has been able to match the mouth-watering flavor of a charcoal-grilled T-bone steak—though they're getting closer all the time. However, hamburger extended with 25 percent soybean protein already tastes as good as 100 percent ground beef.

Fabricated (which does not necessarily mean artificial) foods are by no means new. Bread, after all, is not found in nature; it took man to arrange the raw ingredients. Ice cream and yogurt are other fabricated standbys. Imitation cheese, made with corn oil, has been on the market for some time, as have non-dairy creamers of polyunsaturated soy oil, bologna made from turkey or chicken, simulated fruit based on seaweed and gelatin, and grapeless wine.

Even some of our most traditional fare, while remaining essentially unchanged in appearance, is headed for technological change. At the U.S. Department of Agriculture's Animal Research Center in Beltsville, Md., scientists have raised cattle whose meat and milk contain reduced amounts of saturated fats—ingredients that are suspected of contributing to heart disease.

The secret of this biological sleight-of-hand is to feed the animals drops of polyunsaturated safflower oil coated with a layer of protein that has been treated with formaldehyde to prevent it from breaking down and converting into saturated fat in the ruminants' digestive systems. Instead, the vegetable oils reach the animals' tissue and milk intact, where they replace saturated fats and—*presto!*—create polyunsaturated cows.

Not even the chicken has escaped the scientists' scrutiny. With the increased emphasis on body weight in poultry—it costs less to produce a

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*NUTRITIONIST'S NOTE: Vegetable products usually do not contain sufficient zinc or vitamin B-12 unless fortified.

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small number of large birds than a large number of small ones—the 21st century could see chickens as big as turkeys and, conceivably, turkeys the size of ostriches!

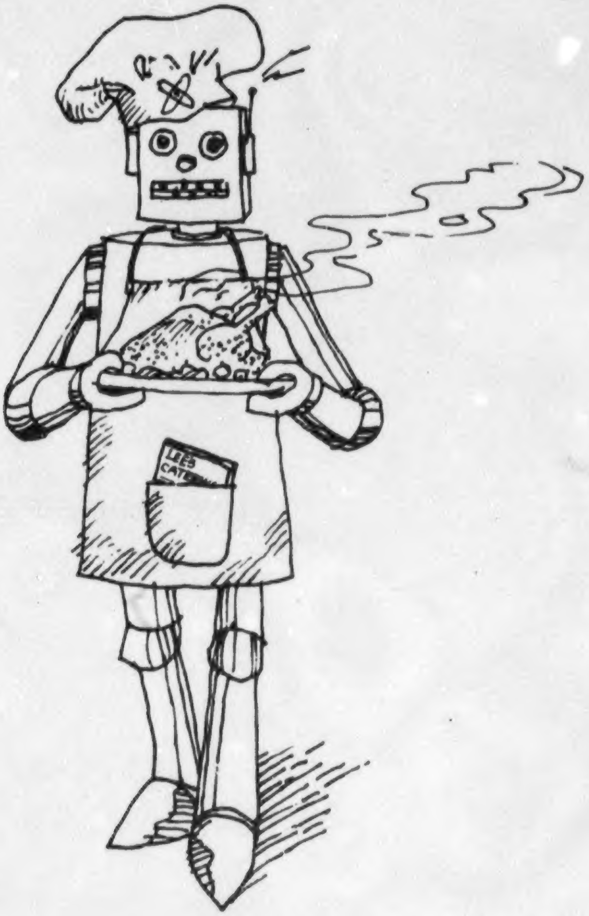
No less revolutionary are the so-called vegetable "factories." Situated near their markets and programmed for year-round growth, these giant greenhouses—adaptable to climates from arctic cold to desert heat—could turn out many times the amounts of greens presently grown in natural surroundings.

On an experimental level, they are already here. The Environmental Research Laboratory (ERL) at the University of Arizona maintains several "controlled-environment-agriculture" greenhouses covering more than three acres under one roof. No fertile soil is needed, only sand—one of the earth's most abundant materials. Temperature, light, water with dissolved plant nutrients, and atmosphere are all computer-controlled.

Since the environment is sterile and self-contained, only a bare minimum of pesticides and fungicides is needed. A plastic liner underlying the sand prevents seepage, reducing water consumption by 90 percent over what is needed in an open field. In a yield comparison of tomatoes and cucumbers grown in a controlled-environment facility in the desert of Abu Dhabi and in fields in the United States, ERL scientists found the desert yields, with year-round harvesting, dozens of times greater.

As for shopping, with gas prices on a one-way trip up, we may someday be ordering our food from home, perhaps via computer terminals tied by telephone circuits to robotized warehouses. Just program in your favorite meals for the week; all the necessary ingredients, in exactly the right amounts as determined by a central computer, will be delivered to your home, much like the daily mail.

Meanwhile, pass the soybean pot roast, toss the vegetable-factory salad, pour the whey-out wine and let's toast the 21st century. *Bon appetit!*



# Other Publications Available from the Department of Education

*Nutrition Education—Choose Well, Be Well: A Curriculum Guide for the Upper Elemetary Grades* is one of approximately 500 publications that are available from the California State Department of Education. Some of the more recent publications or those most widely used are the following:

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| California Private School Directory | $9.00 |
| California Public School Directory | 12.50 |
| California's Demonstration Programs in Reading and Mathematics (1980) | 2.00 |
| Discussion Guide for the California School Improvement Program (1978) | 1.50*† |
| District Master Plan for School Improvement (1979) | 1.50* |
| Eating Habits of Students in California Public Schools, A Summary (1981) | 2.50 |
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| Guidelines and Procedures for Meeting the Specialized Health Care Needs of Students (1980) | 2.50 |
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| History—Social Science Framework for California Public Schools (1981) | 2.25 |
| Improving the Human Environment of Schools (1979) | 2.50 |
| Nutrition Education—Choose Well, Be Well: A Resource Manual for Preschool, Kindergarten, and Elementary Teachers (1982) | 2.25 |
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| Nutrition Education—Choose Well, Be Well: A Curriculum Guide for the Primary Grades (1982) | 3.75 |
| Nutrition Education—Choose Well, Be Well: A Curriculum Guide for the Upper Elementary Grades (1982) | 3.75 |
| Nutrition Education Today: Curriculum Design for Nutritional Knowledge and Food Use, Secondary and Adult Education (1981) | 2.50 |
| Planning a Publicity Campaign (Nutrition Education Training Program packet) (1981) | 2.00 |
| Putting It Together with Parents (1979) | .85† |
| Reading Framework for California Public Schools (1980) | 1.75 |
| The Relationship Between Nutrition and Student Achievement, Behavior, and Health (1980) | 4.00 |
| Science Education for the 1980s (1982) | 2.00 |
| Science Framework for California Public Schools (1978) | 1.65 |
| School Improvement: Making California Education Better (brochure) (1982) | NC* |
| School Nutrition and Food Service Techniques for Children with Exceptional Needs (1982) | 1.00 |
| Simplified Buying Guide (1981) | 1.50 |
| Student Achievement in California Schools | 1.25 |
| Students' Rights and Responsibilities Handbook (1980) | 1.50† |

Orders should be directed to:

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A complete list of publications available from the Department may be obtained by writing to the address listed above.

†Also available in Spanish at the price indicated.
*Developed for implementation of School Improvement.

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